

June 11, 2003

Metropolitan Wastewater Department
Exhibit A
Description of MUNI Capital Projects

MUNI FUND 41506

46-206.0 ANNUAL ALLOCATION - ACCELERATED PROJECTS -

This project provides for emergency construction on the Municipal Sewer System. This project is necessary for emergency failures of the Municipal Sewer System to reduce potential spills and costly Operation and Maintenance expense. As needed projects are designated sub-projects of this Capital Improvement Project.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues.

43-004.0 ANNUAL ALLOCATION - FREEWAY RELOCATION -

This project provides for the relocation of sewer lines in conjunction with highway programs scheduled by the State Department of Transportation. As needed projects are designated sub-projects of this Capital Improvement Project.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. This project is not currently bond funded due to funding from other sources.

46-215.0 ANNUAL ALLOCATION - INFRASTRUCTURE UPGRADE & REPLACEMENT -

This project provides for upgrading and replacing various wastewater infrastructures within the City. Sewer infrastructures are upgraded and replaced as a result of unexpected major private and public construction. As needed projects are designated sub-projects of this Capital Improvement Project.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues.

40-933.0 ANNUAL ALLOCATION - MWWD TRUNK SEWERS - B

This project provides for the replacement of trunk sewers, most of which are over 25 years old and in canyons throughout the City, due to deterioration or insufficient capacity. If not replaced, existing deteriorated and undersized trunk sewers lines have a high degree of failure resulting in sewage spills.

New trunk sewer designs and installations will improve the hydraulic performance of the system and therefore, will reduce the spillage and sewage overflows. As needed projects are designated sub-projects of this Capital Improvement Project.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$5,671,774 or 6% of the total cost of this project is funded from current bond issue (including reimbursement).

41-927.0

ANNUAL ALLOCATION - PUMP STATIONS 64, 65, PENASQUITOS, E. MISSION GORGE - RB

This project provides for comprehensive upgrades, design modifications and major renovations or replacement of major equipment: such as pumps, valves, tanks, controls, odor control system, etc. at the pump stations. As needed projects are designated sub-projects of this Capital Improvement Project. Sub-projects that are funded from this project are the following:

- 41-927.1 PUMP STATION 64 VENT SYSTEM UPGRADE
- 41-927.2 RELOCATE PUMP 4 AT PUMP STATION 65
- 41-927.3 INSTALL ELECTRONIC GATES AT EAST MISSION GORGE & PENASQUITOS PUMP STATION
- 41-927.4 CONSTRUCT RECLAIMED WATERLINE AT PENASQUITOS PUMP STATION
- 41-927.5 LAND ACQUISITION AT EAST MISSION GORGE
- 41-927.6 PUMP STATION 64 PUMP DESIGN MODIFICATION PH I
- 41-927.7 EAST MISSION GORGE FORCE MAIN DESIGN & INVESTIGATION
- 41-927.8 STANDBY ELECTRICAL POWER SYSTEM
- 41-927.9 PUMP STATION 64 ODOR SCRUBBER REHABILITATION
- 41-928.1 VALUE ENGINEERING FOR PUMP STATION 64, 65, PENASQUITOS & EAST MISSION GORGE
- 41-928.2 PUMP STATION 65 CATHODIC PROTECTION
- 41-928.3 PUMP STATION 65 AUTO TRANSFER SWITCH
- 41-928.4 REMOVAL SECOND STAGE PUMP AT PENASQUITOS
- 41-928.5 SCREENS DESIGN REPLACEMENT PS 64, 65, PENASQUITOS
- 41-928.6 PUMP STATION 64 LARGE VALVE
- 41-928.7 PUMP STATION 64 FLOW METER REPLACEMENT PROJECT
- 41-928.8 EAST MISSION GORGE ELECTRICAL ROOM COOLING

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$4,363,623 or 51% of the total cost of this project is funded from current bond issue (including reimbursement).

44-001.0

ANNUAL ALLOCATION - SEWER MAIN REPLACEMENTS - RB

This project provides for the replacement of sewer mains throughout the City due to deterioration or insufficient capacity.

Final Stipulated Order required. The existing concrete sewer lines have a high degree of failure resulting in sewage spills due to various stages of deterioration or insufficient capacity. These sewer group jobs will replace existing concrete sewer mains, of which some are 50 to 70 years old, in various parts of San Diego. They are old, deteriorated and undersized. Some of the projects consist of replacing concrete sewer pipelines that have experienced a number of sewer stoppages resulting from grease buildup. For some areas, the justification of replacement of sewer lines was due to root intrusion.

Under current City policy, concrete sewer and cast iron water mains situated in the same public right-of-way are replaced at the same time to avoid up to \$65 million in additional costs for twice-repeated service disruptions, street resurfacing, traffic impacts, and contractual actions. The shortage of funds for the sewer main replacements would place a similar constraint on water main replacements. As a consequence of this policy, the water main replacement individual projects are closely integrated with concrete sewer replacements.

These new pipeline designs and installations will improve the hydraulic performance of the system and, therefore, will reduce the spillage and sewage overflows. In addition, costly intensive maintenance can be stopped. As needed projects are designated sub-projects of this Capital Improvement Project.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. This project is partially bond funded with current issue due to funding from other sources. \$136,602,103 or 22% of the total cost of this project is funded from current bond issue (including reimbursement).

46-106.0

ANNUAL ALLOCATION - SEWER PUMP STATION RESTORATIONS - RB

This project provides for the replacement of pumping equipment and/or appurtenances due to deterioration. Final Stipulated Order required a prioritization plan for replacement of old/deteriorated pump stations and force mains. This project will provide the necessary funding to comply with the submitted plan to the Environmental Protection Agency.

Many existing sewer pump stations and their force mains have reached or exceeded their anticipated service life of 40 years. However, because of the widely varying actual lengths of service life, the scheduling for pump station restorations is difficult. This project allows more flexibility in replacing deteriorated pumping equipment.

The existing pumps are old and in most cases replacement parts are hard to get. Those having direct effect on potential sewage spills are the ones with:

- An undersized wet well
- Lack of a backup power source and a second force main
- No emergency spill containment capacity
- Several operational problems with regards to current design standards
- Deteriorated force mains

By designing and constructing these new pump stations, the potential for spills are reduced and their impact is minimized due to:

- Providing a secondary source of energy to the new stations (electric and gas generator)
- Improving the design of the sewer mains feeding the stations
- Utilizing the existing wet wells for overflow and provide new facilities with modern equipment
- Upgrading existing and providing dual force mains

As needed projects are designated sub-projects of this Capital Improvement Project.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$29,160,167 or 40% of the total cost of this project is funded from current bond issue (including reimbursement).

46-194.0

ANNUAL ALLOCATION-TRUNK SEWER REHABILITATIONS - RB

This project provides for replacement of trunk sewer portions at various locations throughout the City. These projects often require immediate attention that cannot be accommodated by the more conventional Capital Improvements Program rehabilitation procedures. As needed projects are designated sub-projects of this Capital Improvement Project.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$10,579,529 or 15% of the total cost of this project is funded from current bond issue (including reimbursement).

46-196.6 **BALBOA TRUNK SEWER** - RB

This project provides for upgrading approximately 1,300 feet of pipeline from 15-inch to 21-inch diameter and construction of 5,100 feet of a new 18-inch trunk sewer.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$2,882,614 or 52% of the total cost of this project is funded from current bond issue (including reimbursement).

46-202.0 **BARNETT AVENUE TRUNK SEWER REPLACEMENT** -

This project provides for the replacement of the existing sewer in Barnett Avenue. The existing trunk sewer has deteriorated and is collapsing. The project will use modern construction methods to replace the existing Techite pipe.

This project has been canceled.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

46-203.0 **BAYSHORE TRUNK SEWER REPLACEMENT** - RB

This project provides for replacing approximately 6,200 lineal feet of the existing Bayshore Trunk Sewer in San Antonio Avenue. The existing trunk sewer has deteriorated and has some collapsed sections that need to be replaced. Modern construction methods will be used to replace existing pipe.

Sublet under this project is: 46-203.1, BAYSHORE TRUNK SEWER EMERGENCY REPAIR

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$7,592 or 1% of the total cost of this project is funded from current bond issue (including reimbursement).

45-938.0 **BEACH AREA LOW FLOW STORM DRAIN DIVERSION** -

This project and the City's Transportation Department's Beach Area Low Flow Storm Drain Diversion project, CIP 12-124.0, provide for diversion of low flow storm runoff, diversion of sewer overflows and maintaining adequate water quality along the beaches. This project will allow for the sewer overflows and low flow storm runoff to return to the sewer, preventing pollution in the beach areas.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues.

46-195.0 **BELT STREET TRUNK SEWER** - RB

This project provides for replacing existing sewer in Belt Street from just

northwest of Sampson Street to Harbor Drive. The existing trunk sewer is reaching its capacity and cannot accommodate future projected capacity needs.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$3,748,646 or 63% of the total cost of this project is funded from current bond issue (including reimbursement).

46-191.0 **BRINE MANAGEMENT FORCE MAIN AND PUMP STATION -**

This project provides for a brine pump station and force main to convey industrial brine generated within the Rancho Bernardo service area south to the Metro system. This project will eliminate the need for costly treatment at either San Pasqual Reclaimed Water System or Escondido's Hale Avenue Resources Recovery Facility, and provide the means for industries to dispose of wastewater at lower costs.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues.

46-190.0 **BRINE MANAGEMENT (GRAVITY LINE) -**

This project provides for a brine gravity system to collect flows generated by industries in the Rancho Bernardo area and convey them to a central location at Pump Station 77. This allows the production of high quality reclaimed water, and ultimately increases sewage treatment and disposal capacity in the area.

This project has been canceled.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

40-932.0 **CAMDEN REDEVELOPMENT -**

This project provides for the replacement of the existing six-inch sewer main with a ten-inch sewer main along Kettner Blvd. between Date St. and Beech St. and replacement of all existing sewer laterals along Kettner Blvd. between Date St. and Beach St. This project is needed to upgrade undersized piping for new development.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues.

46-122.0 **CARMEL VALLEY TRUNK SEWER REPLACEMENT-SEWER PUMP STATION 65 - RB**

This project provides for replacing and realigning the existing trunk sewer between Sewer Pump Station 65 and west of Interstate 5. This realignment will accommodate the relocation of Sewer Pump Station 65. It will consist of replacing sewer pipelines in Carmel Valley Road for a total of 1200 linear feet of 10-inch, 18-inch, 30-inch and 39-inch diameter gravity sewer lines. Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$88,614 or 1% of the total cost of this project is funded from current bond issue (including reimbursement).

46-136.0 **CARMEL VALLEY TRUNK SEWER E/O I-5 - RB**

This project provides for the replacement of the existing Carmel Valley Trunk

Sewer east of Interstate 5. The existing sewer has experienced a significant number of structural failures. Continuing development within the area tributary to the existing trunk sewer will also create the need for greater capacity than the existing sewer can provide. Realignment of the existing trunk sewer between Sewer Pump Station 65 and east of Interstate 5 is necessary to accommodate the relocation of Sewer Pump Station 65. CalTrans will replace a portion of the existing trunk sewer in conjunction with its work on the State 56/Interstate 5 interchange.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$1,950,096 or 21% of the total cost of this project is funded from current bond issue (including reimbursement).

46-072.0 **CATALINA BLVD TRUNK SEWER** - RB

This project provides for replacing an existing 8-inch sewer from the vicinity of Nimitz Boulevard and West Point Loma Boulevard to the vicinity of Catalina Boulevard and Chatsworth Boulevard. A portion of the existing trunk sewer was replaced in an earlier phase. The remainder will be replaced to provide relief for existing capacity shortfall. If this work is delayed and/or canceled, the impact would be an increased potential for sewage spills and costly repairs.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$273,483 or 10% of the total cost of this project is funded from current bond issue (including reimbursement).

40-927.0 **CENTRE CITY SEWER IMPROVEMENTS** - RB

This project provides for replacing several existing trunk sewers and associated sewer mains. The project includes replacement of approximately 4,000 linear feet of the south Pacific Highway Trunk Sewer from Market Street to Beech Street, and 3,000 linear feet of the L Street Trunk Sewer from 7th Avenue to 3rd Avenue. The diameter size of the new trunk sewer will be approximately thirty inches.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$314,209 or 15% of the total cost of this project is funded from current bond issue (including reimbursement).

40-910.2 **CHOLLAS VALLEY TRUNK SEWER** - RB

This project provides for replacing undersized portions of the existing trunk sewer between Federal Boulevard at State Route 94 and University Avenue at 69th Street. Portions of the existing trunk sewer are undersized to meet existing flows. Additional portions are within Chollas Creek and subject to flood damage. The new sewer will upgrade the size of the sewer and relocate portions of the sewer outside the creek area.

Phase I is accelerated with new and rehabilitated pipe. Phase II, scheduled in the future, will complete the project. If this work is delayed and/or canceled, the impact would be an increased potential for sewage spills and costly repairs.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$5,864,913 or 67% of the total cost of this project is funded from current bond issue (including reimbursement).

46-162.0 **EAST LINDA VISTA TRUNK SEWER - RB**

This project provides for rehabilitating portions of the existing 15-inch and 18-inch trunk sewer from Hanford Drive to Friars Road. Portions of the existing trunk sewer are subject to structural failure. Rehabilitation is necessary to ensure against such failures.

Sublet under this project is: 46-162.1, East Linda Vista Trunk Sewer Phase 2.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$1,663,528 or 26% of the total cost of this project is funded from current bond issue (including reimbursement).

46-169.0 **EAST MISSION GORGE FORCE MAIN REHABILITATION - B**

This project provides for rehabilitating the existing 48-inch reinforced concrete pipe force main due to corrosion damage. The length of the force main is approximately eight miles long, routed from the pump station located in Santee at 15390 Mission Gorge Road to the discharge point at Fairmount Avenue and Twain Avenue.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$693,808 or 17% of the total cost of this project is funded from current bond issue (including reimbursement).

40-920.4 **EAST MISSION GORGE TRUNK SEWER REHABILITATION - RB**

This project provides for the rehabilitation of the existing East Mission Gorge Trunk Sewer, including manhole reconstruction and possible minor realignments, between the San Diego Mission Road/Fairmount Avenue Extension and the eastern City limits. The expected life for the East Mission Gorge Trunk Sewer was shortened by the deteriorating condition of its manholes. Rehabilitating the manholes and possibly realigning several reaches of the trunk sewer to improve maintenance access and to mitigate environmental infringement should extend its service life to beyond 2040.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$105,708 or 1% of the total cost of this project is funded from current bond issue (including reimbursement).

46-205.0 **HARBOR DRIVE TRUNK SEWER REPLACEMENT - RB**

This project consists of the upgrade of portions of the existing Harbor Drive Trunk Sewer with 15", 18", 48" and 54" pipe. The trunk sewer starting 225 feet downstream of manhole #52 up to manhole #205 will be replaced or lined. The new pipeline will remain within the existing alignment.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$295,612 or 6% of the total cost of this project is funded from current bond issue (including reimbursement).

46-138.0 **HIGHLAND PARK ESTATES TRUNK SEWER - PHASE II - RB**

This project provides for replacement of 5,140 linear feet of 8-inch and 15-inch sewer main in Plaza Blvd, Woodman Street and the adjacent canyon. Construction was followed by revegetation and maintenance. Additional work was performed in the canyon stream bed to meet the California Department of Fish and Game requirements.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$165,350 or 12% of the total cost of this project is funded from current bond issue (including reimbursement).

46-139.0 **HOME AVENUE TRUNK SEWER - CONTRACTS 1, 2 AND 3 - RB**

This project provides for the replacement of the existing trunk sewer along Home Avenue and Auburn Drive from Spillman Drive to just north of Corliss Street, and Auburn Drive east of Interstate 15 from El Cajon Boulevard to State Route 94. The existing sewer is overloaded and replacement is necessary to provide capacity for both existing and future needs.

Originally constructed in 1940 to carry sewage flow from part of the Mid-City area, this sewer main is approximately 18,276 feet in length and 15 inches in size. In May, 1987, the main experienced breakage problems. The broken section showed that the main is an old and deteriorated concrete pipe and at part it is flowing 70% full. This project is divided into three contracts. Contract 1 is completed. Contracts 2 and 3 will be constructed in FY 98 and FY 99, respectively. As a result, the stoppages should be reduced, thereby resulting in a overflow reduction. Sub-projects that are funded from this project are the following:

46-139.1	HOME AVENUE T.S. CONTRACT II	0.47 miles
46-139.2	HOME AVENUE T.S. CONTRACT III	0.77 miles

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$412,581 or 12% of the total cost of this project is funded from current bond issue (including reimbursement).

46-207.0 **JOINT LABORATORY STAND BY EMERGENCY POWER -**

This project provides an emergency power source at the Joint Laboratory located at the Alvarado Filtration Plant Site. This plant handles various tests required by the State Health Department. A power failure would render tests, ongoing at the time, worthless. The installation of a 1000 KW emergency generator would allow continuous and reliable operation of the laboratory.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues.

46-194.2 **LA JOLLA/PACIFIC BEACH TRUNK SEWER - CHELSEA STREET RELOCATION - RB**

This project provides for replacement of an undersized trunk sewer located in an easement with a new trunk sewer located in La Jolla Blvd between Forward St. and Sapphire St. and collector sewer mains in surrounding streets. The pipe diameter is 21-inch for the trunk sewer and varies between 12-inch, 10-inch and 8-inch for the collector sewer mains.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$7,283,624 or 80% of the total cost of this project is funded from current bond issue (including reimbursement).

46-197.9 **LAKE MURRAY TRUNK SEWER IN CANYON** - RB

This project provides for replacing 3 miles of under capacity sewers in the Lake Murray area. The existing sewer is 12-inch to 18-inch in diameter and will be upgraded with a new, larger 18-inch to 24-inch diameter trunk sewer. The southernmost downstream segment will be constructed through sensitive canyon area. The center section will be constructed westerly of Lake Murray, and the upper section will be constructed through the Lake Murray golf course. Due to environmental impacts, some pipe bursting and tunneling under Jackson Dr will be used. Permanent canyon maintenance access is part of the project.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$4,268,236 or 43% of the total cost of this project is funded from current bond issue (including reimbursement).

46-196.0 **MAINTENANCE FACILITIES RELOCATION** - RB

This project provides for relocating the Metropolitan Wastewater Department's Wastewater Collection Division personnel to a new location. The existing location of the Wastewater Collection Division is undersized and in need of more office space for its personnel, additional work space for its facilities maintenance needs, and more space to accommodate equipment and materials storage. Sub-projects that are funded from this project are the following:

- 46-196.1 MAINTENANCE FACILITIES RELOCATION: MOC 1 OFFICE IMPROVEMENTS
- 46-196.2 MAINTENANCE FACILITIES RELOCATION: MOC 5 MOTIVE EQUIP. STORAGE
- 46-196.3 MAINTENANCE FACILITIES RELOCATION: MOC 6 WWC WAREHOUSE

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$347,755 or 6% of the total cost of this project is funded from current bond issue (including reimbursement).

46-195.8 **MIRAMAR ROAD TRUNK SEWER** - RB

This project provides for replacement of an existing 15-inch trunk sewer that is 13,400 feet long with a new 24-inch trunk sewer in the same alignment. The easterly end of the project is on Federal property and serves the Marine Corps Air Station. Discussions with the Federal Government are under way to reduce inflow flow to the sewer system which would reduce the required scope of work.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues.

\$4,395,529 or 55% of the total cost of this project is funded from current bond issue (including reimbursement).

46-196.9 **MONTEZUMA TRUNK SEWER** - RB

This project provides for replacement of 7,438 feet of 15-inch, 21-inch, and 27-inch diameter deteriorated trunk sewers with new 15-inch, 18-inch, and 21-inch diameter trunk sewers.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$1,896,275 or 25% of the total cost of this project is funded from current bond issue (including reimbursement).

40-930.0 **OTAY MESA TRUNK SEWER** - RB

The proposed Otay Mesa Sewer system is to be constructed east of Interstate 805 as depicted on the map in the Master Plan prepared by Rick Engineering Company dated April 9, 1984. The alignment consists of approximately 7,780 lineal feet (LF) of 51" pipe, 2,860 LF of 45" pipe, 5,160 LF of 39" pipe, 4,060 LF of 36" pipe, 4,560 LF of 21" pipe, 4,580 LF of 18" pipe, 2,200 LF of 15" pipe, and 2,000 LF of 6" force main pipe. The majority of the proposed alignment is located in an Open Space (known as Wruck Canyon) Area.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$6,481,075 or 18% of the total cost of this project is funded from current bond issue (including reimbursement).

46-120.0 **PEÑASQUITOS TRUNK SEWER RELIEF** - RB

This project provides for a combination gravity/force main sewer 49,000 feet in length and a pump station to serve as primary relief for the existing Peñasquitos Canyon Interceptor Sewer. The gravity sewer will be 42" and 48" plastic-lined RCP and the force main will be 36" ductile iron pipe. The force main commences at the pump station, located at the southeast corner of I-15 and Poway Road. The pipe travels south, turning west, tunneling under I-15 to the easterly end of Kika Court. From Kika Court, the force main runs west to Mercy Road, west to Black Mountain Road, and south to Miramar Road, where the sewer converts to a gravity line. The gravity sewer flows west in Miramar Road to the North City Water Reclamation Plant.

The proposed combination gravity/force main sewer will have two-tiered 12'-high retaining walls along the south (rear) side of the pump station. It will include a 60" RCP influent line intercepting the existing 2 27" sewers that run through Peñasquitos Creek. There will be a split level pump room 49' x 77' in area approximately 25 feet below the existing grade which contains the main sewer pumps, bridge cranes, and associated mechanical equipment. There will also be a split level motor room 49' x 77' approximately 10 feet below grade containing the pump motors. Four sets of two pumps in series will be installed initially to handle current and intermediate flows, with the fifth pump set to be installed in the future. The 24" discharge force main will exit the building from both the north and south and join before entering the meter structure and then out the access road towards I-15.

A truck loading facility will be incorporated into the station to remove the screenings. A separate maintenance building at the site will house offices, lockers, and a workshop with a mezzanine.

The access road leading from Scripps Poway Parkway to the pump station is approximately ½ mile in length along an existing dirt trail. As the access road turns to the west (approximately 1800 feet north of the end of the frontage road) retaining walls will be used on both sides of the road.

Drainage culverts will be installed under the access road to improve drainage in the area.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$1,119 or less than 1% of the total cost of this project is funded from current bond issue (including reimbursement).

46-506.0 **PIPELINE REHABILITATION IN THE R.O.W. AND EASEMENTS - PHASE A - RB**

This project provides for rehabilitation of approximately 25 miles of existing sanitary sewer lines ranging from eight-inch to eighteen-inch in diameter of mostly vitrified clay pipe, including lining approximately 2,450 service connections and rehabilitation of approximately 65 manholes in the right-of-way, canyons with access, and easements.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$26,979,361 or 70% of the total cost of this project is funded from current bond issue (including reimbursement).

46-188.0 **PUMP STATION 64 - IMPROVEMENT PROJECT - RB**
(FORMERLY PUMP STATION 64 - HPO INJECTION)

This project provides for the installation at Pump Station 64 of a high purity oxygen (HPO) injection system consisting of a liquid oxygen storage tank, vaporizers, injection equipment, piping, meters, control valves, instrumentation/control and telemetry to reduce dissolved sulfide in the wastewater for odor and corrosion control. Pressurized gaseous oxygen will be injected through piping into each of the two 48" diameter discharge force mains at Pump Station 64. The rate of oxygen will be automatically controlled based on the discharge flow through each force main. The project requires the preparation of a project definition report, detailed engineering and design, construction, operator training and start-up activities.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$195,196 or 10% of the total cost of this project is funded from current bond issue (including reimbursement).

46-117.0 **PUMP STATION 65-EXPANSION AND FORCE MAIN - RB**

This project provides for the replacement of Pump Station 65 and a force main. With this construction standby pumping capacity will be available during peak wet weather flow. Projected increase in sewage flows will be accommodated and relocation of the pump station will provide more reliable access.

The project includes demolition of existing Pump Station 65 and construction of a new pump station, consisting of 4,500 sq. ft. pump station building, a 1,500 sq. ft. structure to screen incoming flows, a 2,092 sq. ft. mechanical building, odor control equipment, a 25-ft. wide by 50-ft. long access road, a parking area, landscaping and a 6-foot high chain link/barbed wire perimeter fence on an approximately 61,000 sq. ft. site adjacent to Sorrento Valley Road.

This project also includes the construction of a 30-inch diameter force main.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$261,292 or 1% of the total cost of this project is funded from current bond issue (including reimbursement).

41-929.0 **PUMP STATION UPGRADES - B**

This project provides for upgrading twenty two small service pump stations that are located throughout the northern and central areas of San Diego. Most of these pump stations are wet-well type with submersible pumps. They all require electrical systems upgrades. Also, some may require an additional dual force main and underground storage. These upgrades are part of the interim federal court order which requires completion by May 2005.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$3,024,397 or 49% of the total cost of this project is funded from current bond issue (including reimbursement).

46-178.0 **SAN PASQUAL AQUATIC TREATMENT FACILITY PHASE II -**

This project provides for expansion of the existing treatment plant from 1 MGD to 2 MGD to handle future flows from the Rancho Bernardo area as well as a portion of the wastewater generated in Poway. The plant expansion will maximize the beneficial reuse of treated wastewater, either through reclamation or groundwater recharge, and to minimize operational costs.

New unit processes will include: bar screens, grit chambers, flow equalization, membrane tertiary treatment, ultraviolet, reverse osmosis, hypochlorite disinfection, sludge thickening, sludge digestion, sludge dewatering and odor control. The project also provides for an Operations and Maintenance Building, new research facilities, and landscaping modifications.

This project is canceled.

46-208.0 **SAN PASQUAL EFFLUENT DISPOSAL -**

This project provides for construction of new land and ocean outfalls, and improvements of the existing land and ocean outfalls. This will allow conveyance of future wastewater flows into the land and ocean outfalls that cannot be reclaimed or discharged into the groundwater basin adjacent to the San Pasqual Reclaimed Water System.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues.

42-928.0 **SAN PASQUAL PROCESS REPLACEMENT PROJECT -**

This project provides for the replacement of the existing secondary treatment at San Pasqual Aquatic Treatment Facility consisting of Hyacinth Ponds/Lime Clarification with a fill and draw activated sludge system, Sequencing Batch Reactor (SBR). The SBR treatment will be followed by sand filters, MF/RO and disinfection. This treatment process is capable of producing reclaimed water that meet Title 22 quality requirements as well as requirements for ground discharge.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues.

46-142.0 **SEWER PUMP STATION 24 - RB**

This project provides for the enlarging and upgrading of these pump stations to meet future anticipated sewage flows and provide secondary sources of power to each pump station. Increased capacity is needed to meet present and future peak flows. A secondary source of power to the pump station for backup is needed to make the station more reliable. This project includes dual force mains, a backup power generator and a new 18-inch gravity sewer constructed by micro tunneling.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$342,230 or 6% of the total cost of this project is funded from current bond issue (including reimbursement).

41-923.0 **SEWER PUMP STATION 26 - CLOSURE** - RB

This project provides for the closing of Pump Station 26. It also includes a gravity sewer alignment to redirect the flow south of Jenner Street to Pump Station 24. The gravity sewer alignment will increase the capacity to meet future anticipated sewage peak flows.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$14,918 or 1% of the total cost of this project is funded from current bond issue (including reimbursement).

46-200.0 **SEWER PUMP STATION 30A RELOCATION** - RB

This project provides for the demolition and replacement of Sewer Pump Station 30A with about 5,500 feet of alternative gravity sewer. The existing station is in need of repair and has been prone to failures. The station is physically too small to accommodate routine maintenance and needs substantial upgrades to meet current standards. The alternative to rebuilding the station is to bypass the station and re-route the flows by gravity.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$7,466,302 or 90% of the total cost of this project is funded from current bond issue (including reimbursement).

46-601.6 **SEWER PUMP STATION 45** - RB

This project provides for a single, new sewer pump station 45 to replace three existing sewer pump stations (SPS 28, SPS 29, and SPS 45). 3,646 feet of new gravity sewer and 12,260 feet of new force mains will be installed on N. Torrey Pines Rd. and the Torrey Pines golf course to replace existing mains. This project will upgrade the existing conveyance system to meet current City standards.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$7,445,314 or 52% of the total cost of this project is funded from current bond issue (including reimbursement).

46-204.0 **SEWER PUMP STATION 77 FORCE MAIN REPLACEMENT** -

This project provides for a new sewer force main for the sewer pump station to provide redundancy and reliability.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues.

46-602.6 **SEWER PUMP STATION 79** - RB

This project provides for a new sewer pump station facility with increased capacity build-out wet weather peak flow of 3.86 MGD and new dual sewer force mains to provide redundancy and reliability.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$2,279,061 or 17% of the total cost of this project is funded from current bond issue (including reimbursement).

46-936.0 **SEWER SYSTEM CANYON ACCESS** - RB

This project provides for the design and construction of sewer maintenance accesses. Existing sewer mains in environmentally sensitive areas cannot be maintained since entry into these areas is limited to emergency responses, which average about ten per year. This project will allow development of a proactive plan to maintain these sewer mains. This action will reduce required emergency responses and sewer overflows. The result of this project will be enhanced maintenance allowing a substantial delay in the need for replacement, improved customer service, increased protection of the health and safety of citizens and reduced cost of maintenance of these sewer mains.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$2,456,876 or 57% of the total cost of this project is funded from current bond issue (including reimbursement).

46-197.0 **SORRENTO VALLEY TRUNK SEWER RELOCATION** - RB

This project will provide for relocation of the existing trunk sewer out of the environmentally sensitive Peñasquitos Lagoon. A portion of the existing trunk sewer is currently located within the Peñasquitos Lagoon area and is inaccessible during rainy periods or for regularly scheduled preventative maintenance. This project will remove the deteriorating trunk sewer from this area and install the new one in the City's right-of-way to provide access for maintenance.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$2,239,822 or 19% of the total cost of this project is funded from current bond issue (including reimbursement).

45-946.0 **SOUTH BAY RECLAIMED WATER STORAGE TANK** - B

This project provides for the construction of a reclaimed water storage tank located at the South Bay Water Reclamation Plant, along with a pump station and related piping between the tank and the existing reclaimed water pipeline as it leaves the plant. This project will enable the local distribution and sale of reclaimed water until the full transmission and distribution system are constructed by the Otay Water District.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$1,488,007 or 98% of the total cost of this project is funded from current bond issue (including reimbursement).

40-931.0 **SOUTH MISSION VALLEY TRUNK SEWER** - RB

This project provides for the replacement of the existing trunk sewer and installing a large trunk sewer between Fairmont Avenue and Morena Boulevard along Camino Del Rio South.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$2,969,322 or 25% of the total cost of this project is funded from current bond issue (including reimbursement).

40-928.0 **SOUTH PACIFIC HIGHWAY TRUNK SEWER** - RB

This project provides for the construction of a new South Pacific Highway Trunk Sewer. This new line will be connected at its south end to the Kettner Trunk Sewer and will parallel it. It will act as a relief main to provide the required capacity for existing and future sewage flows. This new South Pacific Highway Trunk Sewer will be approximately 3,932 feet of 33-inch pipe starting near Kettner Avenue and West Harbor Drive and discharging into the South Metro Interceptor near Pacific Highway and Beech Street.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$3,271,598 or 91% of the total cost of this project is funded from current bond issue (including reimbursement).

46-166.0 **TELEMETRY CONTROL SYSTEMS - SCADA** - RB

This project will provide wastewater operators with remote alarm information and remote monitoring of the pump stations' operations. Additionally, it will automatically control the pump operations via wetwell level control. A Stipulation between the City of San Diego and the United States Environmental Protection Agency states that "The significance of the remote alarm and the reliable automatic operation control is the avoidance of sewage spills through the use of more reliable state-of-the-art control devices and communications systems." The pump stations' operations and alarms can be monitored from the Metropolitan Operation Center-II (MOC-II) in Kearny Mesa via five repeater antenna stations on mountaintops. The system will also be monitored via three stations at MOC I and MOC III from desktop computer stations and via Ethernet/Sannet network from laptop computers.

Phase I has been completed. It included four pump stations and Mission Bay Sewer Interceptor System (MBSIS).

Phase II includes eight pump stations and is in progress. It is expected to be completed in 2000. Both Phases I and II were included in the Stipulation between the City of San Diego and the United States Environmental Protection Agency (EPA). The court order stated a fine of \$1000 a day on any delay in Phase II beyond the agreed upon deadline of June 30, 2000. Phases C1, C2, and C3 will be completed in December 2002 and will conclude the incorporation of all pump stations to the Supervisory Control and Data Acquisition System (SCADA).

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$3,330,893 or 40% of the total cost of this project is funded from current bond issue (including reimbursement).

46-198.0 **UCSD TRUNK SEWER** - RB

This project provides for up-sizing approximately 4,500 feet of the existing University of California, San Diego Trunk Sewer. A portion of the existing trunk sewer is reaching its capacity limits and needs to be up-sized to accommodate anticipated future increased flows.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$1,984,986 or 82% of the total cost of this project is funded from current bond issue (including reimbursement).

46-197.6 **USIU TRUNK SEWER** - RB

This project provides for replacing 2.2 miles of existing 12-inch to 15-inch under capacity trunk sewers with new 18-inch to 21-inch diameter trunk sewers. Permanent open space maintenance access is part of the project. Due to heavy traffic or sensitive open space areas, the alignment will make use of either micro tunneling or pipe bursting were possible.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$6,668,682 or 42% of the total cost of this project is funded from current bond issue (including reimbursement).

45-934.0 **VACTOR CLEANINGS DISPOSAL SITE** -

This project provides for the wastewater collection division vector trucks to use the Sewer Cleaning Residuals Unloading Facility (SCRUF) at the South Bay Water Reclamation Plant to dispose of their sewer cleaning. The sewer cleaning will be pumped into the existing 30" influent line using a chopper type pump. The sump will be ventilated using the existing odor control system. This facility will be utilized one to two times per day and the disposal process will take approximately 20 to 30 minutes to complete.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues.

46-199.0 **WEST LINDA VISTA TRUNK SEWER** - RB

This project provides for replacing and up-sizing the existing eight-inch and ten-inch portions of the existing West Linda Vista Trunk Sewer. A portion of the existing trunk sewer is undersized creating a potential bottleneck. The up-sizing of this section will eliminate the existing problem and provides additional capacity for the projected future capacity needs.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$126,180 or 8% of the total cost of this project is funded from current bond issue (including reimbursement).

Metropolitan Wastewater Department

Capital Project Descriptions

Those projects having past expenditures which are being reimbursed from this bond issuance are identified by an "R" following the title. Those projects which will have future expenditures funded by current bond issue are shown with a "B" after the title. The projects which have past costs being reimbursed that will also have future costs funded from these bond proceeds are identified with both an "R" and a "B".

MWWD FUND 41509

42-913.0 ANNUAL ALLOCATION-METRO BIOSOLIDS CENTER - RB

This project provides for improvements and modifications to the existing facilities at the MBC to implement operating efficiencies, optimization of existing facilities and compliance with revised regulatory and operation plan requirements.

Sub projects included in this project are:

- 42-913.3 MBC Plant Improvements Centrifuges Digesters
- 42-913.1 MBC Plant Imp. Centrifuges Digesters
- 42-913.1 Comnet Transfer From 45-920.0
- 42-913.2 MBC Odor Control / CDRS Test/silencer
- 42-913.3 MBC Odor Control / CDRS Test/
- 42-913.4 MBC Access Road
- 42-913.5 MBC Air Release Valve
- 42-913.6 MBC Access to Valves in
- 42-913.7 MBC Sump Pumps
- 42-913.8 MBC Digester Viewport REM
- 42-913.9 MBC Duct Cleaning/access
- 42-914.1 2 C" Centrate Air Vac.
- 42-914.2 MBC Boiler Gas Meter Inst.
- 42-914.3 MBC Phase 2 Hot Water System
- 42-914.4 MBC Wash System For Militronic
- 42-914.5 MBC Design Modification
- 42-914.6 MBC Clarifier Access Station
- 42-914.7 Storm Drain
- 42-914.8 MBC Grit Teacups Access Platform
- 42-914.9 MBC Odor Control Modifications
- 42-915.1 MBC TC Wetwell Mixer
- 42-915.2 MBC Foul Air Duct U-Trap
- 42-915.3 MBC Heat Exchanger
- 42-915.4 MBC Misc. Concrete Work
- 42-915.5 MBC Fan Access Platforms
- 42-915.6 MBC Chemical Building Piping Mods
- 42-915.7 MBC Reclaimed Water to Digester Tsfr Pumps
- 42-915.8 MBC RW Centrate Cathodic Protection
- 42-915.9 MBC Dewatering Transfer Pumps

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$1,579,011 or 13% of the total cost of this project is funded from current bond issue (including reimbursement).

45-956.0 ANNUAL ALLOCATION METRO SYSTEM OPERATIONS CENTER - B

This project provides for improvements or renovations to the existing Metro System Operations Center and associated facilities.

Sub projects funded by this project are:

000.00 HVAC Efficiency Optimization

000.00 HVAC Condensate Line Rerouting
000.00 Switchboard Upgrade
000.00 Paint Exterior with Elastomeric Application
000.00 IDF Room HVAC Upgrade
000.00 MOC Roof Improvement
000.00 Fire Systems Maintenance Program
000.00 MOC I and III HVAC Units Linked to MOC II EMS
000.00 Replacement of Standby Generators Day Tank

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$791,075 or 37% of the total cost of this project is funded from current bond issue (including reimbursement).

42-926.0 **ANNUAL ALLOCATION-NORTH CITY WATER RECLAMATION PLANT** - RB

This project provides for major renovation or replacement of facilities at the treatment plant and associated facilities.

Sub projects funded by this project are:

42926.1 New Plant Improvement Project
42926.2 NCWRP Reroute of BSL Overflow
42926.3 NCWRP Install Course Bubble Diffusers
42926.4 NCWRP Screening Channel
42926.6 NCWRP Automated Scum Spray
42926.7 North City Influent P. S.
42926.8 NCWRP Raw Sludge Cathodic Protection

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$344,177 or 19% of the total cost of this project is funded from current bond issue (including reimbursement).

41-926.0 **ANNUAL ALLOCATION-PUMP STATIONS 1 & 2** - RB

This project provides for comprehensive upgrades, design modifications, major renovations or replacement of major equipment; such as pumps, valves, tanks, controls, odor control system, etc. These improvements will allow the pump stations to be run more efficiently plus increase the reliability of the Metropolitan Wastewater System. As needed projects are designated sub-projects of this C.I.P. Sub-projects that have been funded in the past from this project are the following:

CIP 41-926.1 Pump Station 2 Odor Control System.
CIP 41-926.2 P.S. 1 Liquid Rheostats
CIP 41-926.3 P.S. 2 Liquid Rheostats
CIP 41-926.4 Pump Station 2 Parking Lot Construction
CIP 41-926.5 P. S. 1 Bleach Tank Replacement
CIP 41-926.6 P. S.1 & 2 Sump Pumps/Well Transfer Pumps& Venturi Replacement
CIP 41-926.7 Design of Pump Station 1 Sluice Gates
CIP 41-926.8 P. S. 2 Ozone Pilot Study and Mist Scrubber Upgrades
CIP 41-926.9 P. S. 2 Heat Exchangers Modifications
CIP 41-929.1 P. S. 1 & 2 New Pumps Actuation System Design
CIP 41-929.2 P. S. 1 & 2 Power Reliability Investigation & Design
CIP 41-929.3 P. S. 2 Energy Efficient Services
CIP 41-929.4 Value Engineering for PS 1 & 2
CIP 41-929.5 P. S. Liquid Nat Gas Pre-Design
CIP 41-929.6 P. S. Security Fence & Gate
CIP 41-929.7 P. S. 1 & 2 Design & Installation Level Indicators
CIP 41-929.8 P. S. 1 & 2 Screens Design & Installation
CIP 41-929.9 P. S. 1 Screening Room Liner Improv
CIP 41-930.0 P. S. 1 & 2 Fiber Optic Installation

CIP 41-930.1 P. S. 2 Concrete Work
CIP 41-930.3 P. S. 2 Restroom Relocation

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$3,438,233 or 26% of the total cost of this project is funded from current bond issue (including reimbursement).

45-932.0 **ANNUAL ALLOCATION-SOUTH BAY WATER RECLAMATION PLANT** - RB

This project provides for renovation, modifications or upgrades of facilities at the treatment plant and associated facilities to enhance processes.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$185,955 or 15% of the total cost of this project is funded from current bond issue (including reimbursement).

46-186.0 **BIOSOLIDS DEMONSTRATION PROJECT #1** -

This project provided for evaluation of the effects of biosolids (sewage sludge) wet cake direct land application as a soil amendment to two common forage crops (Sudan grass and Alfalfa Hay) in the Imperial Valley. The study evaluated soil characteristics, irrigation management and drainage water quality, and hay quality aspects. A major part of the study was to quantify soil salinity, water infiltration rates and heavy metal accumulation in soil and drainage water. The study also observe the cumulative aspects of biosolids application on hay quality and on soil characteristics. This study was conducted as part of a group of studies. The first study was administered by the Biosolids Recyclers of Southern California, a non-profit organization of Public-Owned Treatment Works and various biosolids beneficial use industries. The University of California Cooperative Extension Service conducted the study.

This project has been completed.

45-910.2 **CLEAN WATER PROGRAM PREDESIGN AND ENGINEERING SUPPORT** - RB
(FORMERLY CLEAN WATER PROGRAM MANAGEMENT AND ADMINISTRATION)

This project provides for support activities performed by consultants relating to program management, records management, scheduling, quality assurance and control, and procurement support during design and construction.

Expenditures to date are reimbursable.

This project has the potential for funding from future bond issues. \$405,992 or less than 1% of the total cost of this project is funded from current bond issue (including reimbursement).

45-944.0 **COMC CONTROL OF EMERGENCY GENERATORS** - RB

This project provides for the remote operations of existing Metropolitan Wastewater Department's emergency generators when electrical system relief is requested by the California Independent System Operator, providing demand relief and electrical energy for the utility grid as a result of the operation of emergency generators.

The required equipment will be installed at the following locations:

- Sewer Pump Station 5, 1795 E. Harbor Drive, 125 kilowatt generator
- Sewer Pump Station 9A, 318 Saturn Blvd., 180 kilowatt generator
- Sewer Pump Station 15, 3795 Crown Point Dr., 175 kilowatt generator

- Sewer Pump Station 24, 350 Coast Blvd. , 300 kilowatt generator
- Sewer Pump Station 62, 15500 Paymogo St., 230 kilowatt generator
- Sewer Pump Station 86, 5890 Copley Dr., 175 kilowatt generator
- Sewer Pump Station 79, 10332 San Dieguito Rd., 550 kilowatt generator
- Sewer Pump Station 77, 18308 W. Bernardo Dr., 2x750 kilowatt generator
- Point Loma Water Treatment Plant, 1500 kilowatt generator
- Metropolitan Operations Center, (MOC 2), 500 kilowatt generator

The equipment installed at each location includes electrical and electronic wiring, conduit, and miscellaneous instrumentation and control equipment such as relays. At each pump station modifications were made to the generator controls, including the automatic transfer switch. Software modifications were also made to the Programmable Logic Controller at each facility. At Sewer Pump Station 77 a Uninterruptible Power Supply was added for the Programmable Logic Controller. Software modifications were made to the SCADA control system computer (part of the Comnet system) at the Metropolitan Operations Center (MOC) control room. These included additional control logic, graphic screens and reports.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has been completed.

45-923.0

DAIRY MART ROAD AND BRIDGE IMPROVEMENTS - RB

This project provides for an all-weather access bridge to the South Bay Water Reclamation Plant. The South Bay Water Reclamation Plant (SBWRP) will be located next to the International Border (on Monument Road, south of Dairy Mart Road). Because this plant will be in operation 24 hours a day and will have occasional material deliveries, a road with reliable, all-weather access is required. The existing Dairy Mart Road and Bridge does not provide reliable access during flood events that exceed an estimated 10-year frequency.

The project limits are from the intersection of Dairy Mart Road and Tia Juana Street to the intersection of Dairy Mart Road and Monument Road. The total length of the project is approximately 5,000 feet (4,000 feet of roadway construction and 1,000 feet of bridge construction). The project also includes a multi-use on one side of the road and bridge. The top of the roadway surface will be constructed two feet (minimum) above the 100-year flood elevation. The bottom of the bridge will be constructed five feet (minimum) above the 100-year flood elevation.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. This project is partially bond funded with current issue due to funding from other sources. \$192 or less than 1% of the total cost of this project is funded from current bond issue (including reimbursement).

40-910.4

EAST MISSION BAY EFFLUENT PIPELINE -
(FORMERLY EAST MISSION BAY RECLAMATION WATER PIPELINE)

This project provided for construction of a pipeline to transport effluent from the Rose Canyon pipeline to the Point Loma Tunnel Outfall (designation was originally the San Diego River Land Outfall) at the I-5/I-8 intersection for disposal into the ocean. This project provided for a 54 inch diameter pipeline approximately 23,000 feet long. It transports North City Water Reclamation Plant (NCWRP) effluent from the new Rose Canyon Trunk Sewer to a junction structure located near the intersection of I-5 and I-8 (in the north east quadrant of this intersection). This project is currently on hold.

46-187.0

ENVIRONMENTAL MONITORING & TECHNICAL SERVICES LAB - RB
(FORMERLY CHEMISTRY AND INDUSTRIAL WASTE LABORATORY FACILITIES)

This project provides for a new environmental monitoring laboratory for the Metropolitan Wastewater Department's Technical Services Division. The Technical Services Division conducts a comprehensive compliance-related sampling program in support of wastewater treatment and effluent disposal operations. The laboratory program ensures compliance with standards set by the state and federal government through ocean monitoring, sampling, and testing. Over 100 Chemists and Biologists conduct 250,000 tests annually in support of this program. The purpose of this new laboratory is to (1) centralize operations that are currently located at various places throughout the area to provide more efficient and cost-effective operations; (2) relocate current operations out of leased space; (3) ease overcrowding at two of our existing facilities; and (4) to separate the City's water laboratory functions from the wastewater functions.

The laboratory is being constructed on approximately 7.5 acres of property located on the Camp Nimitz side of the former Naval Training Center. The property requested for conveyance for this facility is an approximately 7.5 acre parcel adjacent to the boat channel. A Public Benefit Conveyance application for this property was submitted in September, 1999. The property was conveyed to the City of San Diego on January 8, 2001.

This project is considered Phase I of a larger program intended to relocate all MWWDD testing and laboratory functions to this site. Phase I, this project, consists of a two story, approximately 37,000 square foot building containing administrative offices and ocean monitoring laboratories. It also includes construction of approximately 290 parking spaces and a boat dock in the adjacent channel for MWWDD's two ocean going vessels. The laboratory will be certified and registered as an environmental testing laboratory pursuant to the provisions of the California Environmental Laboratory Improvement Act of 1988 (Health and Safety Code, Division 1, Part 2, Chapter 7.5, commencing with Section 100825). Phase II will contain an additional 65,000 square feet of facilities and will house MWWDD's Wastewater Chemistry, Industrial Waste, and Industrial Waste Compliance laboratories.

The proposed laboratory conforms to the use identified in the Naval Training Center San Diego Reuse Plan and associated environmental documents. A Mitigated Negative Declaration was prepared and certified wherein the MWWDD laboratory was addressed. Mitigation for a small portion of eel grass to be impacted by the boat dock construction was required and will be carried out.

Final design on Phase I of the facility began in December, 1999 and was completed in January, 2001. Construction commenced in November, 2001 and is scheduled to be completed by November, 2003.

Components of the Facility include:

37,000 square foot, two-story building: Three existing structures totaling approximately 26,000 square feet will be demolished and removed to make way for the new laboratory building. The main facility will be constructed using concrete, reinforced piles/pile cap foundation and steel frame construction. The facility will consist of a basic rectangular portion, housing the laboratory functions, and a quarter circle office block attached at the northern end of the building. In the center of the office space will be a two-story space which will be used for display and public interaction.

The first floor of the laboratory block will house toxicology, taxonomy, and ocean operations. These elements need to be on the first floor due to their functions and vibration concerns. The second floor of the laboratory will house bacteriology, media preparation, and support facilities such as glass wash, vector management, virus sample, virus assay, and clean work room. The office block includes administrative offices and graphic arts on the first level; while the second level will include reception, management, permits and compliance, a lunch room, and a library. Computer rooms, conference rooms, and toilet facilities are located on both floors.

A storage structure and an enclosed equipment structure will be located outside to the south of the building. A hardscaped element will run from the south end of the building to the boat dock to be located in the adjacent channel. The boat dock will be a combination fixed and floating type dock to allow for tidal fluctuations. A lock gate will be located at the entrance to the boat dock for security and safety reasons.

Located in the eastern portion of the parcel, a surface parking lot of approximately 290 spaces will be constructed. This will be adequate parking for the full build out of all proposed MWWDD facilities, and will also accommodate about 50 parking spaces for a future laboratory to be constructed by San Diego State University.

Site landscape improvements: The surrounding site will include a hardscaped plaza at the entry to create a forecourt and separation for future buildings. The surrounding area, including the space for the future buildings, will be landscaped with turf, shrubs, and trees per requirements of the City's landscape section. A curved walkway will lead to the parking lot in the east end of the parcel. Eventually, a park like esplanade will be designed and constructed between the laboratory building and the channel.

Infrastructure improvements: Also included in Phase I are improvements to adjacent infrastructure. Kincaid Road, an existing substandard road, will be improved. This road runs along the eastern boundary of the site. It will be improved to include curbs, gutters, sidewalks, storm drains, and landscaped areas. A private driveway will be constructed along the southern boundary of the site to provide access to the parking lot and for deliveries to the laboratory. Vehicular access to the boat dock will be gained from this driveway. This private driveway will be shared between MWWDD and a future hotel to be constructed at a later date.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$7,724,491 or 45% of the total cost of this project is funded from current bond issue (including reimbursement).

40-921.0

FIRP PHASE II DIGESTED SLUDGE AND CENTRATE PIPELINE -
(FORMERLY CENTRATE PIPELINE EXTENSION)

This project provides for the second phase of the relocation of the sludge facilities from Fiesta Island. It includes a continuation of the digested sludge pipeline from Sunset Cliffs to the Metro Biosolids Center and a 6" fiber optic conduit. In addition, it includes approximately 1300 linear feet of utility piping which will service the Metro Biosolids Center (4" ductile iron force main, 16" and 20" cement mortar lines and coated steel pipe for water conveyance and up to seven multi-use PVC conduits).

DIGESTED SLUDGE PIPELINE: This pipe is approximately 10 miles in length and 12-inch to 14-inch in diameter. It is polyurethane lined and coated ductile iron pipe.

The majority of this pipeline is located in the public right of way. The northerly portion crosses private property (1300 linear feet), Interstate 805 and State Route 52. Easements have been obtained for crossing the private property. Easements have been obtained from Cal Trans for Interstate 805 and State Route crossing.

A sublet of this project, 40921.1 FIRP Phase II Street Slurry, provides for the slurry seal or street resurfacing.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has been completed.

46-055.0

FIRP PUMP STATION - RB

(FORMERLY FIESTA ISLAND REPLACEMENT PROJECT)

This project provides for the first phase of the relocation of the sludge facilities from Fiesta Island in Mission Bay Park to the Metro Biosolids Center. This project includes an approximately 10-mile long 12 & 14-inch ductile iron digested sludge pipeline from Sunset Cliffs Bridge to the Metro Biosolids Center at Marine Corp. Naval Air Station at Miramar.

The proposed FIRP Sludge Pump Station will pump digested sludge from the Point Loma Wastewater Treatment Plant (PLWTP) to the Metro Biosolids Center. This project will be located at the intersection of Gatchell Road and Second Street at the south end of PLWTP. This facility will house four biosolids/sludge pumps and associated equipment for pumping and screening of biosolids. The FIRP Pump Station facility will include:

- A lower below grade pump room level (approximately 90 feet x 35 feet, at elevation 70) which contains the main sludge pumps, sludge grinders, a bridge crane, sludge feed pumps and associated mechanical equipment (the feed pumps may be located in the adjacent gallery).
- A main at grade level (approximately 90 feet x 55 feet, at elevation 97, i.e., existing grade) which contains odor control room, switch gear, motor control centers, a pump access and maintenance area, and a possible future drive-through facility for loading sludge screening.
- A second level (90 feet x 55 feet, at elevation 112) which will contain the sludge screening equipment. The roof of the pump station will extend to a maximum height of 40 feet above existing grade or an approximate elevation of 137 feet.
- A truck loading facility will be designed into the facility to remove the screening.

A below-grade gallery extension adjacent to the pump station will also be constructed with this project (from 20 feet south of C Street to 20 feet south of the pump station). The gallery will be a below-grade structure 15 feet high by a minimum of 15 feet wide at elevation 76. The width will be determined by the space required for future equipment.

A 12-inch discharge force main will exit the pump station to the east or north and be routed around to the east side of the existing digesters. The force main will be attached to a 6-foot high retaining wall that is being constructed along with slope revegetation to help alleviate the erosion on the hillside east of Third Street.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$18,008 or less than 1% of the total cost of this project is funded from current bond issue (including reimbursement).

41-925.0

FOURTH SLUDGE PUMP AND OTHER MODIFICATIONS - RB

The existing Point Loma Sludge Pump Station (SPS) has three (3) sludge pumps, five sludge screens, an odor control facility and other ancillary equipment. It was constructed and put into operation in February 1998 as part of the Fiesta Island Replacement Project. The pumps are used to pump biosolids through a 17 mile force main to the Metro Biosolids Center adjacent to the City's Miramar Landfill. The pumps are large specialized equipment and some of the most vital pieces of equipment at the Point Loma Wastewater Treatment Plant (PLWTP). An inability to convey biosolids from PLWTP at the desired rate could lead to reduced plant performance lasting over long periods of time and possible permit violations. Today two pumps are required to meet the daily flows. Routine maintenance of one pump leaves no standby pump. After 10 years of use, major overhaul of the main gearbox is expected. This is a shop task requiring 1 to 2 months per pump. A fourth pump is needed to provide flexibility and reliability at the PLWTP. Other modifications necessary at the Sludge Pump Station (SPS) included in this project are listed below:

- A sixth sludge screen is needed for the upgraded biosolids processing operations.

- The variable frequency drives (VFD) and control panels can be susceptible to failure and prevent pumping. This project will look at the option to run the pumps at a constant speed if the VFDs fail.
- Redundant discharge piping is needed for greater flexibility to do preventive maintenance.
- Design will look at option to install individual flow meters for each pump to better diagnose pump problems while in operation.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$2,932,684 or 55% of the total cost of this project is funded from current bond issue (including reimbursement).

42-911.4

METRO BIOSOLIDS CENTER - RB

This project provides for the planning, design and construction of facilities for sludge processing. It will thicken, digest, dewater and dry sludge from the North City Water Reclamation Plant (NCWRP) and the Point Loma Water Treatment Plant (PLWTP). The facility is proposed to be located at a 34 acre site on Marine Corp Air Station (MCAS) Miramar, immediately north of State Route 52 and west of Convoy Street. It includes the following facilities:

Raw Biosolids Receiving Tank: The tank will receive raw biosolids from the NCWRP and is intended to dampen peak flows. The receiving tank will be of the same configuration as the anaerobic digesters (two tanks, 528,303 gallons each). The tank will be constructed using a cast-in-place core wall wound with post-tensioning wires and covered with shotcrete. The tank will have a PVC liner cast-in-place with the concrete which will cover the roof and walls to reduce potential for corrosion.

Biosolids Thickening (Centrifuge): High solids centrifuges will thicken wet biosolids from about 0.5% to 0.8% dry solids to 5-6% solids using a high speed rotating drum. Assuming one unit will be out of service and one unit will be provided as standby, five centrifuges will be needed.

Thickened Biosolids Screening and Blending Tanks: The dual compartmented thickened biosolids blending tanks will receive thickened and screened biosolids and blend them to achieve a more homogeneous feed to the digesters. The blending tanks will be located adjacent to the thickening building. The capacity will be 23,697 gallons each.

Anaerobic Digesters: Anaerobic digesters will be provided that are a single high rate complete mix, with overflow withdrawal. The facility will consist of three 105 foot diameter tanks with a liquid depth of 45 feet (2,913,147 gallons each). The digester tanks will be constructed using a cast-in-place core wall wound with post-tensioning wires and covered with shotcrete. The tanks will have a PVC liner cast-in-place with the concrete. Each digester will have a fixed concrete cover supported by tank walls and interior columns.

Digested Biosolids Storage Tanks: The storage tanks will provide storage capacity (two tanks 1,295,389 gal./each) for maximum peak flows expected from the digesters and for emergencies if the dewatering process is out of service.

Biosolids Dewatering: The digested biosolids will be dewatered using the centrifuge dewatering process. In this process, water is removed by forcing biosolids to the outer wall of a rotating bowl. Eight centrifuges at 200 gallons per minute (gpm) will be installed. This assumes that two centrifuges may be out of service, one for repair and two for standby. Adjacent to the centrifuges truck loading structure which houses storage silos, pumps and truck loading equipment.

Wastewater Pump Station: A wastewater pump station will be built at the northwest corner of the Metro Biosolids Center. It will receive wastewater from various processes and centrate and sub-natant from the dewatering process. This waste will be pumped through the centrate pipeline to the North Metro Interceptor Sewer. The pump station will have a wet well and a pump

room below grade. It will also include an office, lab, laydown area and electrical room above grade. The station sub-structure will be approximately 80 feet x 51 feet in plan and 33 feet deep. The single story super-structure will be about 24 feet high. The basic structural system will be a cast-in-place reinforced concrete system. The station will be large enough to house three pumps. Each pump will be capable of pumping 2,500 gpm.

Chemical Storage and Odor Control Building: This building will be used to house chemical feed equipment used in the Metro Biosolids Center processes. Pumps, compressors and other equipment will be housed in the enclosed one story cast-in-place reinforced concrete building. The building is approximately 5,000 square feet. The chemicals, which include caustic soda, sodium hypochlorite, sulfuric acid, ferric chloride and polymer, will be stored in outdoor tanks with containment basins where required.

Energy Building: This building will house hot water boilers, chillers and associated mechanical equipment. The necessary electrical and control equipment will also be housed in this one story precast tilt-up building. The building is approximately 100 feet by 85 feet.

Operations Building: The Operations Building is a one story tilt-up reinforced concrete building consisting of three components: administration offices, operations function and maintenance function. Within these components are the Manager's office, Supervisors' offices, clerical offices, security office, lobby, assembly room, restrooms, main control room, electrical room, computer room, process control laboratory, staff shower/locker room, machining, carpentry, paint, electrical, electronics, hazardous materials storage and equipment cleaning area. The building is approximately 30,000 square feet.

Truck Wash Facility: The truck wash facility is a one-story building which will serve as a washing area for biosolids transport trucks as they enter the facility. It will house an equipment room, office/laundry area, electrical room and an open/covered washing area. This building encompasses 2,646 square feet.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$584,244 or less than 1% of the total cost of this project is funded from current bond issue (including reimbursement).

45-920.1 METRO SYSTEM OPERATIONS CENTER -

This project provides a facility for housing the operation staff of the Clean Water Program. It also provides a location for the centralized reporting for COMNET, which is the computer monitoring/control system for the Clean Water Program. It will also be used for pre-equipment purchase storage and serve as an Operations Training Center for the new facilities. This project involved the acquisition of an existing facility located in the Kearny Mesa area. The facility has two existing buildings. One building at 9192 Topaz Way has approximately 106,204 square feet which contains approximately 43,000 square feet of office space. It is a two-story building with 100% heating and air conditioning systems with parking for 280 vehicles. Zoning is M1B (light industrial). This building is approximately 12 years old.

The other building located at 9150 Topaz Way has approximately 30,260 square feet contains approximately 7,260 square feet of office space with 100% heating and air-conditioning systems. It is a single-story building and has parking for 63 vehicles. The building is zoned M1B (light industrial). The building is approximately 40 years old. The acquisition also consists of a two-acre empty lot located adjacent and to the north of the building sites.

This project has been completed.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

METROPOLITAN OPERATIONS CENTER MOC II BUILDOUT -

This project will provide for improvements to 9192 Topaz Way, Metropolitan Operations Center, MOC II. The long range plan for this facility will require the build out of the existing 1st floor warehouse into office space. This facility will provide office space for Metropolitan Wastewater staff that currently resides at 600 B street (leased downtown office location) and will house essential services for emergency readiness - COMNET. This project will also included a seismic study and seismic retrofit, if required.

This project provides for the design and buildout of the existing warehouse into office space. The size of the build out is approximately 30,000 square feet. These improvements include: demolition of the existing warehouse and roll up doors; addition of several windows; addition of several new restroom and shower facilities, storage areas, conference rooms, heating and air conditioning, duct work, electrical, suspended ceilings and lighting, carpeting, tile, drywall and paint; and installation of cubicles and furnishings. This projects also includes construction related to compliance with Americans with Disabilities Acts i.e. entry ways, sliding doors, handicapped parking spaces and ramps. Due to the additional number of City employees at this facility, it will be necessary to upgrade the existing telephone and data equipment. Initial construction was completed in June 2000.

This project will also provide for construction tasks identified during and after the initial renovation that were not included in the original contracts. These construction tasks include: replacement of the ceiling and floor tiles in the Industrial Wastewater Control Program; installation of an exterior steel stairs from the existing balcony area of the MOC-2 building located on the north side of the building; installation of a redundant back-up condenser and roof pack unit on the roof area of the MOC-2 building to provide air-conditioning service to the existing computer room located on the first floor of the MOC-2 building; construction of an entrance canopy located on the south side of the MOC-2 building; emergency switchboard additional loading to connect MOC 1 to the emergency generator; cool roof application for additional insulation; and replacement of the existing single swing entrance door with an automatic dual sliding door for ADA compliance. It is estimated that construction will be completed in September 2002.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

\$331,573 or 4% of the total cost of this project is funded from current bond issue (including reimbursement).

MISSION VALLEY WATER RECLAMATION PLANT PHASE II -

This project provides for the construction of a treatment plant to be located at Camino del Rio North and Mission City Parkway, site of the former Aquaculture Facility. This project includes land acquisition, demolition costs, design and construction.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project is on hold.

MISSION VALLEY WATER RECLAMATION PLANT ROAD IMPROVEMENTS - RB

This project provides for the realignment and widening of a 0.25-mile segment of Camino del Rio North easterly from the intersection with Mission City Parkway. The current non-standard geometry of the existing road would be upgraded to current design standards for a 4-lane collector road as provided for in the Mission Valley Community Plan.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project is on hold.

45-925.0 **MOC ENERGY UPGRADE** -

This project provides for upgrading the heating, ventilation and air conditioning (HVAC) system of the Municipal Operation Center (MOC). MOC consists of two buildings: MOC I and MOC II. This project is intended to upgrade the systems of both buildings. A study will determine the most cost effective system upgrade. In addition, an energy management system will be considered as well as other energy/HVAC features.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has been complete.

45-957.0 **MOC PHOTOVOLTAIC SYSTEM** - RB

This project provides for the roof-top installation of three 30-kilowatt solar electric production systems at the MOC 1, 2, and 3 facilities. This installation of the photovoltaic system will save both money and energy and is consistent with San Diego City Council's direction, as a result of the declaration of a state of emergency, to pursue the development of additional energy supplies.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has been completed

46-504.0 **NORTH CITY COGENERATION FACILITY** - RB

This project provides for low cost electricity to the North City Water Reclamation Plant (NCWRP). It includes a privatized landfill, a gas (LFG) fired power plant on a site leased to the privatizer at the NCWRP, a City-owned LFG pipeline, a compressor station and a partially privatized electric line on the Miramar landfill. Some sitework at the NCWRP and the landfill are required to be done by the City.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has been completed

40-910.6 **NORTH CITY EFFLUENT PIPELINE** -
(FORMERLY NORTH CITY RECLAIMED WATER PIPELINE)

This project provides for construction of a 54-inch diameter reclaimed water transmission pipeline to connect the NCWRP with the new Rose Canyon Trunk Sewer. It will run southward within City-owned land from Miramar Road on the east side of I-805, into Rose Canyon. This project provides for a 54-inch diameter pipeline that will be approximately 5,200 feet long. It will be either steel or concrete cylinder pipe. It will transport NCWRP effluent from the west end of the North City Tunnel Connector to the new Rose Canyon Trunk Sewer.

This project is currently on hold

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

42-911.3 **NORTH CITY RAW SLUDGE AND WATER PIPELINES** - RB

This project provides for the planning, design and construction of a raw sludge force main and a reclaimed water pipeline from the North City Water Reclamation Plant (NCWRP) to the Metro Biosolids Center, a centrate pipeline from Metro Biosolids Center to the North City Water Reclamation Plant, and a raw sludge pump station at the NCWRP.

The pipeline work started in November 1995. The pump station contractor started work in August 1995.

Pipeline: The pipeline work involves the construction of a 40-inch, 36-inch and 12-inch reclaimed water pipelines, 16-inch raw sludge pipeline, 20-inch centrate pipeline and a 4-inch fiber optic conduit across the Marine Corp Air Station-Miramar from Miramar Road southerly 25,377 feet to the Metro Biosolids Center site and appurtenant work. The pipe materials for the sludge line are polyethylene-lined ductile iron pipe with a epoxy coating. For the water line, the material is ductile iron pipe cement mortar lined with epoxy coating.

Pump Station: The pump station work includes the construction, excavation, concrete, piping, valves, meters, pumps, electrical and instrumentation work.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$14,502 or less than 1% of the total cost of this project is funded from current bond issue (including reimbursement).

42-910.0 **NORTH CITY SLUDGE PROCESSING FACILITIES** -
(FORMERLY NORTH CITY SLUDGE STABILIZATION FACILITY)

This project provides the environmental documentation for the Metro Biosolids Center - Phase II. This projects provide the site-specific environmental documentation (EIS/EIR) required for the Metro Biosolids Center and the North City Raw Sludge and Water Pipeline which are both proposed to be located on federal property.

This project has been completed.

42-910.8 **NORTH CITY TUNNEL CONNECTOR** -
(FORMERLY NORTH CITY WASTEWATER DIVERSION FACILITIES)

This project brings wastewater into the North City Water Reclamation Plant (NCWRP) by diverting flow from the Pump Station 64 force main. This project consists of an approximately 19-foot diameter tunnel that is approximately 2000 feet long. In addition, this tunnel houses several pipelines. One is an 84-inch sewer influent line that carries wastewater flows from the Pump Station 64 force main into the NCWRP. Another will be a 54-inch effluent pipeline that, in the future, will connect the NCWRP to the North City Pipeline. Other pipelines include a 48-inch reclaimed water pipeline and a 24-inch plant waste pipeline. Several fiber optic conduits are also included. The tunnel is approximately two-thirds filled with concrete. The pipeline materials are either ductile iron, steel, PVC or concrete cylinder pipe.

This project has been completed.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

42-910.1 **NORTH CITY WATER RECLAMATION PLANT** - RB

This project provides for construction of a water reclamation plant near the intersection of I-805 and Miramar Road to generate up to 30 million gallons

per day (MGD) of reclaimed water for Phase I and 45 MGD for Phase II. The 34-acre plant site is located just East of I-805 and North of Miramar Road. The site extends north to Eastgate Mall Road. The influent arriving at the NCWRP will be processed by screening followed by primary sedimentation, aeration in an activate sludge reactor, secondary sedimentation, filtration, and chlorination. The process facilities are designed to meet the comprehensive reclaimed water requirements set forth in Title 22 of the California Code of Regulations for construction with reinforced concrete.

Administration /Operation and Maintenance (O&M) Building: This building is approximately 30,000 square feet and will house the administrative, operation and maintenance staff.

Influent Pump Station: This facility will pump the wastewater to the head work facilities. This building is approximately 10,000 square feet.

Headwork facilities: The wastewater will be screened and then grit would be removed in an aerated grit chamber. In this process, particle such as sand, gravel and other heavy, solid materials are removed. The approximate square footage of this building is 21,000.

Primary Sedimentation Tanks: In these tanks, the velocity of the water slows sufficiently to allow most solids to settle by gravity. The solids are removed as primary sludge from the bottom of the tanks. This process can remove up to 70 percent of suspended solids from the wastewater. The tanks are approximately 11-foot deep and 41,000 square feet.

Aeration Basins: The wastewater would flow at a slow rate through the aeration basins. The highly concentrated microorganisms consume the soluble organic matter in the wastewater. Air is bubbled through the wastewater at all times to meet the oxygen requirements of the organisms and maintain aerobic condition. These tanks are approximately 81,000 square feet.

Secondary Sedimentation Basins: The function of these tanks is similar to the primary sedimentation basins. Up to 90 percent of the suspended solids will be removed from wastewater in these tanks. These tanks are approximately 63,000 square feet.

Tertiary Filters: The flow from secondary sedimentation tanks will flow to tertiary filters for additional solids removal. The filters are approximately 29,000 square feet.

Chlorine Contact Tanks: The filtered wastewater will be mixed with chlorine and directed to the chlorine contact tanks for disinfection. With detention time of 120 minutes, the bacteriological content of the water can be brought into compliance with the requirements of the Title 22. The tanks are approximately 36,000 square feet.

Chemical Building: Chemicals such as ferric chloride, caustic and sodium hypochlorite will be stored in this building. This building is approximately 17,000 square feet.

Demineralization Building: In order to ensure that the reclaimed water meets irrigation needs with regards to salinity levels, this facility will reduce the Total Dissolved Solids (TDS) of the water. Electro dialysis Reversal membrane technology will be used in dual stages.

Sodium Hypochlorite Disinfection System Modifications: To increase the efficiency and reliability of the reclaimed water disinfection system two 1,200 gallon day tanks are being installed with metering pumps near the chlorine contact tanks.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$378,279 or less than 1% of the total cost of this project is funded from current bond issue (including reimbursement).

NCWRP PERMANENT DEMINERALIZATION FACILITY - RB

This project provides for a new facility to meet the increasing demands for reclaimed water and to ensure that the salinity is maintained at marketable levels for use in landscape irrigation. This project provides for the expansion of the existing demineralization facility consisting of three trains of Electrodialysis Reversal (EDR) equipment. The expansion will add an additional two trains of EDR to increase the facility maximum capacity to 15 million gallons per day of reclaimed water, with a total dissolved solids (TDS) level below 1,000 milligrams per liter.

Preliminary design began in Fiscal Year 2003, the design and construction are scheduled to be completed in Fiscal Year 2004.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. This project is partially bond funded with current issue due to funding from other sources. \$1,924,192 or 52% of the total cost of this project is funded from current bond issue (including reimbursement).

OTAY RIVER PUMP STATION - RB

This project provides for the reconstruction of existing Pump Station 9A continue pumping the existing Imperial Beach flows north, since the quality is not suitable for reclamation, and provide up to 12 mgd capacity to pump flows south to the Grove Avenue Pump Station which feeds the South Bay Water Reclamation Plant. This additional flow is needed to reach capacity of the plant. The additional flows will be diverted to the pump station from two existing trunk sewers, the Salt Creek Trunk Sewer and the Otay Trunk Sewer, approximately 3,400 feet north through a new 36-inch gravity pipeline. A 24-inch force main will be constructed from the Otay River Pump Station to the Grove Avenue Pump Station, approximately 9,300 feet.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. This project is partially bond funded with current issue due to funding from other sources. \$3,841,416 or 33% of the total cost of this project is funded from current bond issue (including reimbursement).

POINT LOMA - DIGESTER FACILITY UPGRADE AND EXPANSION - RB

This project provides for upgrading and expanding the Point Loma Water Treatment Plant (PLWTP) digester facilities. Upgrading includes heating, mixing, heat recovery, digester feed/withdrawal and gas handling. Expansion consists of constructing a seventh and eighth digester. This project will allow for the upgrade and expansion of the sludge digestion and gas utilization system at the PLWTP, including automation, electrical, instrumentation and piping for the proposed and existing sludge digesters, construction of a new central boiler facility tied into the Gas Utilization Facility and replacement of the Waste Gas Burner (including relocation, piping, valves and automated controls and ignition). This project will also allow for increased efficiency and capacity of the existing sludge digestion system at the PLWTP.

Digesters 7 and 8 will be new concrete digesters at the south east corner of the PLWTP immediately south of the existing digesters. Digester 8 will be 125 ft. in diameter approximately 46 ft. in height and have an operating volume of approximately 515,400 cubic feet. This digester will operate as a primary digester 100% of the time. Digester 7 will be 110 ft. in diameter and a height on the west side of approximately 46 ft. The operating volume will be

approximately 427,400 cubic ft. This digester will operate mainly as a wet well and holding tank for the Point Loma Sludge Pump Station.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$1,086,890 or 2% of the total cost of this project is funded from current bond issue (including reimbursement).

46-218.0 **POINT LOMA - DIGESTERS S1 & S2 UPGRADES** - RB

This project will complete the digester upgrades and expansions which have been underway at the Point Loma Wastewater Treatment Plant PLWTP since the early 1990's. This construction and rehabilitation will complete the last two of eight digesters to be either constructed or upgraded in the current improvement program for the digestion system. These digesters were constructed in the late 1980's and are showing signs of wear. This project will upgrade the piping, mixing system and roofs, and inspect and repair the concrete tanks to keep the S1 and S2 digesters operating efficiently, effectively and safely.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$5,908,418 or 43% of the total cost of this project is funded from current bond issue (including reimbursement).

40-920.5 **POINT LOMA TUNNEL OUTFALL** -

This project provides for design and construction of the land and ocean outfall to transport excess reclaimed water from the north and central regions for disposal into the ocean. The proposed outfall project will be an approximately 9.1 mile long tunnel transporting treated effluent to a bottom lay pipe presently being constructed 12,000 feet offshore near the Point Loma Water Treatment Plant (PLWTP). The tunnel will be constructed of concrete segments ranging in size from 9 to 12 feet in diameter.

The tunnel will begin in the vicinity of the intersection of Napa Street and Friars Road at a proposed headworks location. This headworks will combine flows from different areas of the city. The headworks will be located on a 1.8 acre site. It will combine flows from the northern and central treatment areas and neutralize the chlorine in the flows. The majority of the structure will be below grade.

The proposed Point Loma Tunnel Outfall (PLTO) will head due west through the Rose Canyon Fault. At that point, just west of I-5 it will bear south/southwest toward the north end of North Island where a construction shaft will be located.

A possible construction shaft will be at the northern end of North Island. This site will also serve as a construction staging area. The tunnel from North Island will then bear west toward the PLWTP.

A drop shaft will be located at the plant to pick up the effluent flows from the treatment plant. A valving structure will also be located at the plant. This will allow for diversions to the existing outfall if the need arises.

From the plant the tunnel will parallel the existing outfall where it will terminate offshore at the riser shaft. This riser shaft will rise to the ocean floor and connect to the outfall extension. This outfall structure is presently being constructed.

This project is on hold.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

45-960.0

POINT LOMA - SOUTH ACCESS ROAD PROTECTION PROJECT - RB

This Point Loma Wastewater Treatment Plant project will provide for continued access to the Point Loma Wastewater Treatment Plant from the south. Presently there are two sea coves that are threatening the south and sole access to the Point Loma Wastewater Treatment Plant.

This project will look at alternatives to maintain that access. Possible improvement alternatives include the placement rock placed at sea level or a seawall, or a combination of the two to reduce the rate of erosion. Another alternative may be a completely new approach to reducing the erosion rate at the threatened areas.

The completed project when in place will provide continued access from the south to the Point Loma Wastewater Treatment Plant. The project crosses environmentally sensitive land at the Cabrillo National Monument. The preliminary designs will take into account those lands to create a project that achieves the objective in the most environmentally sensitive manner.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$156,955 or 7% of the total cost of this project is funded from current bond issue (including reimbursement).

45-910.3

PROGRAM PLANNING AND STUDIES ACTIVITIES -

This project provides for activities relating to the preparation of a facility plan for the Clean Water Program, including the Framework Plan, project report, EIR/EIS, as-needed consultant services, and financial and revenue plans. This project also provides specialized institutional studies and activities relating to financing and reorganizing the Metropolitan Sewerage System.

This project is not funded from this bond issue.

45-945.0

PUMP ENERGY RECOVERY PROJECT (PERP) - RB

The Point Loma Wastewater Treatment Plant Hydroelectric Facility was constructed in 1985. This facility was designed to produce 1.35MW, sufficient to power approximately 1300 homes, of power by utilizing the potential energy in the 100' elevation drop between effluent channel and the outfall when flow was diverted through the Hydroelectric Facility. While the facility did produce electricity, the existing effluent control were not adequate to maintain a constant flow to the generator and turbine. This caused the generator to overheat and trip off line. In September 2000 it was determined that the rehabilitation of the Hydroelectric Plant was financially viable due to the following reasons:

1. Rising cost of electricity
2. The plant effluent controls had been greatly improved since 1985 by the replacement of the 84" cone valve with an 84" sleeve valve on the North Effluent Outfall Connection and the installation of three 54" sleeve valves on the South Effluent Outfall Connection.

Rehabilitation of the hydroelectric facility included refurbishment of the generator and turbine and replacement of all the electrical controls

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has been completed.

41-928.0 **PUMP STATIONS #1 AND #2 LARGE VALVE REPLACEMENT** - RB

Pump Stations #1 and #2 are two of the cities largest, oldest and most critical pump stations. This project will provide for the replacement of the facility suction and discharge isolation valves, their motorized operators, check valves or pump control valves (cone valves), and replacement or refurbishment of related piping and associated appurtenances. This project will also provide for the rehabilitation or replacement of the force main manifold isolation valves, force main cross tie valves and their motorized operators. This project has been deemed necessary since, the existing valves are past their useful life and are in need of extensive repairs.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$1,379,215 or 56% of the total cost of this project is funded from current bond issue (including reimbursement).

40-920.0 **ROSE CANYON TRUNK SEWER - CWP PORTION** -

This project provides funding for the Metropolitan Wastewater Department's (formerly Clean Water Program) share of the Rose Canyon Trunk Sewer Project (CIP 46-111.0) to be constructed by the Water Utilities Department. This project provides an outlet for the disposal of any excess reclaimed water.

This project will provide for the construction of a pipeline, 72-inch maximum, that will initially carry untreated wastewater from Pump Station No. 64 to the Point Loma Water Treatment Plant (PLWTP). After the North City Water Reclamation Plant (NCWRP) is operational, this proposed pipeline will be converted to an effluent pipeline which will carry excess reclaimed effluent from the NCWRP to the Point Loma Outfall.

The proposed pipeline consists of approximately 4.8 miles of variably sized pipelines. Specifically, this includes 22,750 linear feet (lf) of 60-inch diameter pipeline, 1,410 lf of 48-inch diameter pipeline, 680 lf of 54-inch diameter pipeline, and 545 lf of 72-inch diameter pipeline. This project also includes property acquisition and associated structures, including a concrete utility bridge (crossing Rose Creek at Santa Fe Street), two junction structures, three diversion structures and numerous manholes.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has been completed.

42-910.2 **SLUDGE AND BIOSOLIDS MANAGEMENT FACILITY -**
(FORMERLY SOUTHERN SLUDGE DISPOSAL FACILITY)

This project provides for the processing and final disposal of excess sludge from the metro system which cannot be beneficially reused. There are currently two candidate sites.

SITE #1

This is a 77 acre site and access road under private ownership, located within the City of San Diego and adjacent to NAS Miramar. The owner conducts a rock extraction and processing business on the site and on adjacent land owned by the U.S. Navy. Four or five lessees occupy space on the privately-owned land and operate businesses compatible with the rock extraction activities, such as a concrete batch plant, asphalt emulsion plant, satin seal plant and truck maintenance shop.

One concrete block, 10,000 square feet office building, an 8,500 square feet concrete block maintenance building, and three or four 2,000 square feet metal warehouse-type buildings are on the site. One unfilled pit is on the site and a second area is slated for future excavation. In total, the two pits consume approximately one third of the 77-acre site.

If used by the Metropolitan Wastewater Department (formerly Clean Water Program) for a biosolids disposal site, it is expected that the pits will be lined with a synthetic material to render them water-tight. The entire site, including the pits, would then be filled with a biosolids/soil mix. Filling operations would be consistent with a reclamation plan that would be approved by the City of San Diego and the State Division of Mines and Geology. It is expected that one or two buildings would also be constructed on the site for storage and maintenance of equipment if existing buildings are not suitable for this purpose.

SITE #2

This is an undeveloped 300-acre canyon on Otay Mesa near the international border. It is adjacent to other undeveloped land that is proposed and zoned for industrial development. Immediately east of the site is land owned by the Bureau of Land Management.

If developed as a biosolids management and disposal site, approximately 100 acres would be lined with a synthetic liner and used as a monofill for a mixture of biosolids and soil. It is expected that an administration/maintenance building would be constructed on the site and would be a concrete structure of about 10,000 to 20,000 square feet. A new half-mile to one-mile long access road would be included in the project. Current access is by a jeep trail.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project is on hold.

46-154.0

SOUTH BAY LAND OUTFALL -

This project provides for Metropolitan Wastewater Department's (formerly Clean Water Program) portion of costs for the planning, design and construction of the first phase of an outfall system in the South Bay that will be used to convey treated effluent from the International Treatment Plant, the South Bay Water Reclamation Plant and future City southern region plants to the ocean for final disposal. Construction of the outfall is completed and consists of:

- 10,075 feet of 144-inch diameter reinforced concrete pipe with coal tar epoxy exterior, Class I.
- 1,775 feet of 144-inch diameter reinforced concrete pipe with coal tar epoxy exterior, Class II.
- 450 feet of 144-inch diameter reinforced concrete pipe with coal tar epoxy exterior, Class III, all pipe was manufactured by Ameron.

- 8 cast-in-place structural reinforced concrete manholes.
- 24 cathodic monitoring stations.
- A 60-foot wide permanent easement along the pipeline alignment.

This project has been completed.

40-910.1

SOUTH BAY OCEAN OUTFALL -
(FORMERLY SOUTH BAY OUTFALL EXTENSION)

This project provides for Metropolitan Wastewater Department's (formerly Clean Water Program) portion of costs for the planning, design and construction of an extension to the South Bay Land Outfall to convey treated effluent from the International Treatment Plant, the South Bay Water Reclamation Plant and future City southern region plants to the ocean for final disposal.

The ocean outfall has a design flow rate of 174 million gallons per day (mgd) average flow and 333 (mgd) peak flow. The ocean outfall was designed for a service life of 75 years. The initial dilution rate at the diffusers will be 100:1.

The ocean outfall will be a partial tunnel, partial seabed laid pipeline. The ocean outfall consists of an effluent distribution structure, an energy dissipation structure, an anti-intrusion structure, a drop shaft tunnel, riser, a seabed pipeline, a diffuser-wye structure and two seabed diffuser legs.

Effluent Distribution Structure and Energy Dissipation Structure: These structures are both located at the upstream end of the South Bay Land Outfall (SBLO) and will connect the proposed treatment plants to the SBLO. The purpose of the effluent distribution structure is to receive effluent from the International Treatment Plant and proposed City of San Diego South Bay plants and distribute it to either the energy dissipation pipeline, the energy dissipation bypass pipeline, a future pipeline to Mexico or the overflow to the Tia Juana River Channel. There is an accommodation for a 72-inch diameter pipeline for the connection of the City's plant.

Energy Dissipation Pipeline: This pipeline will dissipate excess potential energy between the connection from the treatment plants for the SBLO. It consists of one 144-inch diameter reinforced concrete pipeline with another 144-inch diameter reinforced pipeline as a bypass from the effluent distribution structure to the SBLO. The dissipation pipeline has a sill and 32 baffles at equally-spaced eight-foot centers. Also included is a vault to contain the valves for the two pipelines prior to discharge to the SBLO.

Anti-intrusion Structure: This structure is located at the downstream end of the SBLO. It will be used to prevent the intrusion of sea water into the outfall during high tide and low flow conditions. It consists of an underground vault with three 36-inch diameter flap gates, two air and vacuum valve assemblies, a safety grill and a 144-inch diameter steel pipeline, all of which connect the SBLO to the drop shaft.

Drop Shaft Tunnel: This tunnel will connect and convey effluent from the anti-intrusion structure to the tunnel. It consists of a 36-foot diameter, steel-lined shaft going down to a depth of -160 feet mean lower low water (MLLW). The tunnel is 132-inches in diameter and is sloped downward to an elevation of approximately -220 feet MLLW. The tunnel is 19,000 feet in length. The initial and final support of the excavated tunnel will be with pre-cast, reinforced concrete segments. The riser connects the tunnel to the seabed pipeline. The riser consists of a shaft with an internal diameter of 108 inches, with the exception of the top thirty feet which has a diameter of 120 inches.

Seabed Pipeline: This pipeline consists of 4,658 feet of 120-inch internal diameter reinforced concrete pipeline. A diffuser wye structure connects the seabed pipeline to the diffusers. The two diffuser legs have risers with ports ranging in diameter from 2.375 inches to 2.625 inches. The risers are spaced at 24 feet on center. The internal angle between the diffuser legs is 151 degrees. The diffusers are 1,944 feet long and are made out of reinforced concrete pipe ranging in internal diameter from 54 to 84 inches.

The project will be operational at the end of December 1998.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project is not funded from this bond issue.

40-911.1 **SOUTH BAY PUMP STATION AND CONVEYANCE SYSTEM-PHASE 1 - RB**

This project involves the design and construction of a pump station and pipeline to convey sewage to the proposed South Bay Secondary Treatment Plant. The pump station will be located in Chula Vista east of Interstate 5 at the intersection of Sea Vale Street and Woodlawn Avenue. It will pump sewage through a force main and gravity sewer system running approximately 9 miles to the South Bay Secondary Treatment Plant. The preferred pipeline alignment will proceed from the pump station, west to Bay Boulevard thence south along Bay Boulevard, cross the Otay River and continue south along Saturn Boulevard to Sunset Avenue where it will turn east to Hollister Street thence south to a tunnel crossing the Tijuana River and on to the South Bay Secondary Treatment Plant.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$116,479 or 10% of the total cost of this project is funded from current bond issue (including reimbursement).

42-910.5 **SOUTH BAY SLUDGE PROCESSING FACILITIES -**
(FORMERLY SLUDGE PROCESSING FACILITIES)

This project involves the design and construction of a secondary treatment plant and sludge processing facilities adjacent to the South Bay Water Reclamation Plant. This project will provide 21 mgd of additional treatment capacity in the South Bay. The primary treatment process will include screening, grit removal and primary sedimentation. The secondary treatment process will include an aeration system and secondary clarifiers followed by ultraviolet disinfection. The sludge processing facilities will consist of thickening, anaerobic digestion and dewatering.

This project has been canceled.

42-922.0 **SOUTH BAY WASTEWATER TREATMENT PLANT PHASE 1 -**
(FORMERLY: SOUTH BAY SECONDARY TREATMENT PLANT AND SLUDGE PROCESSING
FACILITIES PHASE 1)

This project provides for a secondary treatment plant and sludge processing facility adjacent to the South Bay Water Reclamation Plant. This project will provide 21 million gallons per day of additional treatment capacity in the South Bay. The primary treatment process will include aeration and secondary clarification, followed by filtration and ultraviolet disinfection. The sludge processing facilities will provide for thickening, anaerobic digestion and dewatering.

This project is on hold.

42-910.6

SOUTH BAY WATER RECLAMATION PLANT - RB
(FORMERLY SOUTH BAY WATER RECLAMATION & SECONDARY PLANTS)

This project provides for a reclamation plant that will treat raw sewage and produce reclaimed water, thereby relieving the South Metro Interceptor.

The South Bay Water Reclamation Plant (SBWRP) will be located at Dairy Mart Road, adjacent to the International Wastewater Treatment Plant. The design and construction of this plant will be done in two phases. Under current design, Phase I of the SBWRP will treat 7 million gallons per day (MGD) of average flow with a peak of up to 18 mgd. Phase II of this plant will increase reclaimed water production to 15 mgd, average daily flow with a peak of 18 mgd remaining unchanged. Phase I of SBWRP is currently under construction and Phase II is being designed. Due to current market demands for reclaimed water and significant capital cost savings, the MWWD has decided to proceed with the construction of Phase II of the SBWRP in conjunction with Phase I, using the same construction contractor. Both Phase I and II are expected to be completed by FY 2001.

All flows through the SBWRP will receive a minimum of secondary treatment, with up to 15 mgd of flow receiving tertiary treatment during the irrigation season. During the non-irrigation season, it is anticipated that the majority of the effluent water will receive secondary treatment and be discharged to the ocean. Only utility water will receive tertiary treatment. Primary treatment processes for the SBWRP will include screening, grit removal, and primary sedimentation; secondary treatment processes will include an aeration system and secondary clarifiers; and tertiary treatment processes will include monomedia tertiary filters and ultra violet (UV) disinfection.

Major structures of the SBWRP are described below:

Headworks and Primary Sedimentation Tanks: The headworks facilities will have a common cast-in-place concrete structure with the primary sedimentation basins. The headworks facilities include influent flow metering, mechanical bar screens, aerated grit chambers and grit classification equipment. Influent wastewater flow will be metered and screened. Grit will be removed in two (2) aerated grit tanks each of which are 10 ft. deep x 15 ft. wide x 30 ft. long. The primary facilities also include primary influent channel, primary sedimentation tanks, primary effluent channels and metering pipes, grit and primary sludge pump gallery, sludge transfer pump station and primary scum conveyance and pumping facilities. There are a total of five (5) primary sedimentation tanks and each are 12 ft. deep x 20 ft. wide x 100 ft. long. In the primary sedimentation tanks, the velocity of the water slows sufficiently to allow most solids to settle by gravity. Sludge will be pumped to the South Metro Interceptor for subsequent removal at Point Loma Wastewater Treatment Plant (PLWTP).

Flow Equalization: The primary purpose of flow equalization at SBWRP will be to attenuate diurnal flow variations through the secondary and tertiary treatment facilities by reducing peak flows that occur over a 24-hour period. This facility includes flow equalization metering, pumping and storage tanks.

Aeration Basins: There are a total of eight (8) aeration basins and they are 18 feet deep x 25 ft. wide x 190 ft. long. The wastewater would flow at a slow rate through the aeration basins while highly concentrated microorganisms consume the soluble organic matter in the wastewater. Each basin consists of an anoxic zone followed by an aerobic zone. Air would be diffused through the wastewater in the aerobic portion to meet oxygen requirements of the organisms. The process will provide a degree of nitrification/denitrification.

Secondary Clarifiers: The secondary clarification facilities consist of secondary clarifiers, secondary scum collection and pumping, and return activated sludge pumping. The secondary clarification process will remove suspended solids from the flow from the aeration basins for recycling or wasting. There are a total of nine (9) units. Each secondary clarifier is 15 ft. deep x 20 ft. wide x 120 ft. long. The secondary effluent will be either pumped to the tertiary treatment facilities or disinfected by UV and flow by gravity to the South Bay Ocean Outfall for ocean discharge. Waste sludge from the secondary clarifiers will also be pumped to PLWTP.

Tertiary Filters: The tertiary filters will share a common cast-in-place concrete structure with the secondary clarifiers. Some of the flow from the secondary clarifiers will be pumped to the tertiary filtration system to receive produced reclaimed water during non-rainy season. Secondary effluent not pumped to the filters will be disinfected and discharged to the ocean. There are a total of seven (7) filters, each 450 square feet. Filtered effluent will flow to UV disinfection and then to the reclaimed water pump station.

Ultra Violet Disinfection: The SBWRP disinfection facilities includes a tertiary UV disinfection process, UV lamp bank cleaning facilities, and a UV control building. The UV disinfection process will be used to treat filtered effluent from tertiary filtration.

Chemical Building: This building will house the chemical storage tanks and chemical feeding equipment used in the various treatment processes.

Operations Building: This building will house the plant administration, operations and employee support functions.

Maintenance Building: This building will house the maintenance shops, warehousing and maintenance support functions.

Blower Building: This building will house the air blowers required for process aeration and for agitation of the influent and effluent channels of the primary sedimentation tanks, aeration basins and secondary clarifiers.

Odor Control Facilities: The foul air stream from the headworks, primary clarifiers, equalization tanks, grit basins, screening and scum loading areas and the sludge pump station will be treated using a two-stage wet scrubber system. The first stage will consistently remove approximately 90% of the Hydrogen Sulfide (H₂S) in the foul air, followed by 95% removal of remaining H₂S in the second stage.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. This project is partially bond funded with current issue due to funding from other sources. \$3,056,644 or 2% of the total cost of this project is funded from current bond issue (including reimbursement).

40-911.3

SOUTH BAY WATER RECLAMATION SEWER AND PUMP STATION - RB
(FORMERLY SOUTH BAY WATER RECLAMATION SEWERS)

This project provides for the construction of sewer pipelines and pump stations to divert better quality wastewater to the South Bay Water Reclamation Plant and will also relieve the South Metro Interceptor. This project will be located within the Otay Mesa/Nestor and Tia Juana River Valley communities and will have three components, South Bay Pump Station, South Bay Reclamation Sewer and Sludge Pipeline.

South Bay Pump Station: This pump station will pump reclaimable quality wastewater to the South Bay Water Reclamation Plant for treatment. It will have an average capacity of 15 million gallons per day (mgd) and a total capacity of 18 mgd at peak flow (during wet weather). The pump station will be located on the north side of Grove Avenue, east of Hollister Street and directly west of Interstate 5. This building will house a footprint of approximately 9,000 square feet (110 feet by 80 feet). The station would be comprised of the following components: wet well (approximately 21 feet deep), pump room, motor room, motor control center room, control room, mechanical room, maintenance and storage room, chemical feed area, odor control room, San Diego Gas & Electric room and restrooms/showers.

South Bay Reclamation Sewer: This sewer would convey reclaimable quality wastewater from the proposed South Bay Pump Station to the South Bay Water Reclamation Plant. It is planned as a 30-inch diameter pipeline.

Sludge Pipeline: This pipeline will convey raw sludge generated at the South Bay Water Reclamation Plant to the South Metro Interceptor Sewer which will then convey the sludge to the Point Loma Wastewater Treatment Plant for treatment. The recommended pipe materials for the sewer pipeline and sludge pipeline are cement mortar-lined and coated steel pipe or cement mortar-lined and tape coated steel pipe; coated/lined concrete cylinder pipe; and ductile iron pipe cement mortar-lined with tape coating. The sludge pipeline is planned as an 10" diameter pipeline that would be located in the same trench with the South Bay Reclamation Sewer.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. This project is partially bond funded with current issue due to funding from other sources. \$181,871 or less than 1% of the total cost of this project is funded from current bond issue (including reimbursement).

45-961.0

SOUTH METRO SEWER REHABILITATION, PHASE 3B - RB

This project provides for the rehabilitation of the 108" sewer pipe between Pump Station No. 2 and Winship Lane. This project also includes rehabilitation of the wye structure at Pump Station No.2 where the South Metro Interceptor and the North Metro Interceptor converge just before their flows enter Pump Station No. 2.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$77,853 or 2% of the total cost of this project is funded from current bond issue (including reimbursement).

40-911.5

STATE OCEAN PLAN COMPLIANCE FACILITIES - PHASE II -

This project provided for compliance with the California State Ocean Plan by extending the ocean outfall at the PLWTP. The project consisted of extending the existing outfall 12,500 feet starting from the existing diffuser wye (wye is a single pipe that splits--with "Y" or "T" configuration), 2.2 miles out in the ocean at a depth of 210 feet to about 4.5 miles out at a depth of 316 feet and ending in a new Y-shaped diffuser wye that extended the effluent carrying pipe an additional 2,500 feet to the north and south of the main barrel alignment to aid dispersion. The pipe was laid in 20-foot sections. Each section of the main barrel is made of reinforced concrete 12-foot internal diameter and weighs about 70 tons. The diffuser pipes are also made from

reinforced concrete and vary in size from 7-foot internal diameter to 4-foot internal diameter. The pipe was manufactured by Hydro Conduit Corporation in Corona, California.

This project has been completed.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

45-920.0

WASTEWATER OPERATIONS MANAGEMENT NETWORK (COMNET) - RB
(FORMERLY METRO SYSTEM CONTROL CENTER)

This project provides for a Wastewater Operations Management Network (COMNET) which will unite all process monitoring and control systems and local area computer networks (LAN) in and between new and existing facilities. The purpose of this project is to provide for centralized management and planning for all the major existing and new wastewater and reclaimed water facilities for the Metropolitan Wastewater Department (formerly Clean Water Program). The project will also provide for furnishing and installing a computerized control system and will also include the instrumentation and control units at the major wastewater treatment and water reclamation plants, sludge processing facilities and pumping plants.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$7,342,464 or 9% of the total cost of this project is funded from current bond issue (including reimbursement).

45-940.0

WET WEATHER STORAGE FACILITY - RB

This project provides for a seven million gallon per day storage facility to intercept peak wet weather flows generated in the Metropolitan Sewage System. The facility will reduce the risk of potential wet weather overflows, which may be caused by the capacity limitation of the existing collection system during rainfall events. This project includes construction of a seven million gallon underground storage tank, underneath the firing range building owned by the Public Safety Training Institute, at the former Naval Training Center near Pump Station 2. The ancillary facilities of this rectangular reinforced concrete tank will include a diversion structure, pumping station, pipelines, and odor control equipment.

The storage facility is designed to provide hydraulic relief during rainy weather to Pump Station 2, as well as to both the South and North Metro Interceptors. Its function is to reduce the risk of major sewage spills from the interceptors and large trunk sewers. Subsequently, an additional seven million gallon storage tank (Phase II) may be required as early as the winter of 2009 depending on the projected overall flow conditions within the Metropolitan Sewage System.

This project is expected to start the construction phase in May 2006 and complete the startup phase in April 2011.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project is not funded from this bond issue.

METRO FUND 41508

46-119.0 ANNUAL ALLOCATION-POINT LOMA TREATMENT PLANT & RELATED FACILITIES - RB

This project provides for major renovation or replacement of facilities at the treatment plant, pump stations and associated facilities as needed. As needed projects are designated sub-projects of this C.I.P. Sub-projects that have been funded in the past from this project are the following:

46-119.1	Pump Station Chemical Containment
46-131.0	Point Loma Ocean Outfall Intake Structure
46-190.2	PLWTP Headworks
46-190.4	Motor Control Centers
46-190.6	Pump Stations 1 & 2-Hoist Systems
46-190.7	PLWTP Digester Compressor Bldgs. & Water Lines Replacement
46-190.8	Fiesta Island Facilities Improvements
46-190.9	Pump Station 1 Force Main Drain Repair
46-191.0	Pump Station 64 Electrical Control Power Upgrade
46-191.1	PLWTP-Prefab Paint Booth
46-191.2	Point Loma Grit Pipe Replacement
46-191.4	Point Loma Grit Suction
46-191.3	Point Loma Maintenance Bldg.
46-600.6	Pump Station 1 Electrical Upgrade
46-191.5	Point Loma Storm Drain Low Flow Diversion Structure
46-191.6	Point Loma Sedimentation Basins- Lighting
46-191.7	Point Loma Skyroom and PCM HVAC Upgrades
46-191.8	Point Loma Sewer Main Replacement
46-191.9	Point Loma Scum Constrator Platform
46-192.1	Point Loma Concrete Restorations Sed. Basins 9-12
46-192.2	Point Loma Gas Filter Project
46-192.3	Point Loma Gas Chillers
46-192.4	Point Loma HVAC Upgrades Air Conditioning
46-192.5	Point Loma Odor Control Scrubber Fans
46-192.6	Point Loma Diesel Dual Fuel Conversion
46-192.7	Point Loma 84-inch Penstock Improvement
46-192.8	Submersible Actuator Replacement
46-192.9	Gas Utilization Facility I&C Startup
46-193.1	Bin Storage and Truck Wash
46-193.2	Hydro Road Stormwater Diversion
46-193.3	Vortex Vent
46-193.4	FIRP Phase B, C, & D Cathodic Protection
46-193.5	Point Loma UV Investigations
46-193.6	Point Loma Hydro Vent
46-193.7	Point Loma NEOC Slide Gate
46-193.8	Point Loma NEOC Slidge Gates & Hydro P.
46-193.9	Point Loma Lower Hydro Road Piping
46-600.6	Pump Station 1

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$1,142,094 or 8% of the total cost of this project is funded from current bond issue (including reimbursement).

46-181.0 FORCE MAIN #1 & #2 SLUICE GATES - RB
FORMERLY FORCE MAIN #1 & #2 CORROSION STUDY

This project provides for the capability to isolate force mains #1 and #2 to facilitate drainage of each force main for inspection purposes and to stop flow into a force main in the event that either force main should break.

The East Portal is a concrete structure that is approximately 27 feet long by 23 feet wide and 40 feet deep. It is located on the U.S. Naval Reservation fuel farm at Point Loma, approximately 2 feet below ground surface and close to private property parcels adjacent to the base boundary. Odor control measures and restricted construction hours will be used to minimize the impacts to this project site neighbor. The east portal is a junction structure for sewer force mains one and two, which transport raw wastewater under pressure from pump station #2 to the west towards Point Loma. Force mains one and two are 72-inch and 87-inch in diameter, respectively. The wastewater continues westerly away from the East Portal to the Point Loma Water Treatment Plant via a single 108-inch gravity flow sewer pipeline.

This project includes the following structures:

- Extension of the existing structure
- Removal of short sections of the existing pipes
- Installation of two sluice gates
- Installation of two Stop log gates

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$515,891 or 10% of the total cost of this project is funded from current bond issue (including reimbursement).

40-922.0

MOC CENTRAL REPAIR FACILITY - RB

This has provided funding for the Land Acquisition of 9191 Kearny Villa Court, (MOC III) in October of 1996. The property acquisition consisted of 35,557-square foot office/warehouse structure with related parking and storage yard situated on a 2.263-acre site. In addition, it provided funding for improvements to the existing facility consisting of build out of a central repair facility, centralized warehousing, office space, locker room facilities, training room, an electrical shop, Store Room No. 64, and seismic upgrade from Zone 3 to Zone 4. This facility serves as a Central Repair and Warehousing facility for the Metropolitan Wastewater Department. Work at 9191 Kearny Villa Court was performed in three phases.

Phase I - Construction began in March 1997. Phase II - Construction began in June 1997 and Phase III in September 1997. Construction for phases I, II, and III was completed March 2000.

Phase I: Tenant Improvements - Approximately 6000 square feet of office space, lockers rooms, and training room for the Wastewater Collections Division. This also included data and telephone connects between MOC II & MOC III.

Phase II: Tenant Improvements - Approximately 10,000 square feet of warehouse area, electrical shop & electronics room, Store Room No. 64, electrical upgrades, and HVAC. Also, telephone and data connections will be install for this phase of work.

Phase III: Tenant Improvements - Install of pump shop, mechanical shop, paint booth and other shops. Heating & exhaust air system to be upgraded for the entire shop area. Also included: All electrical service connections for shop area equipment.

Landscaping for this facility is estimated to be completed August 2002.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$105,322 or 2% of the total cost of this project is funded from current bond issue (including reimbursement).

45-942.0

METROPOLITAN OPERATIONS CENTER EXPANSION PHASE II - RB

This project provides for the expansion of the existing Metropolitan Operations Center and will include MOC-7 Storage Facility, MOC-8 Storage Facility, and MOC-9 Automotive Repair Facility. On June 1999 the City acquired two parcels of land, 2.16 acres, with three industrial buildings totaling 32,038 square feet located at 5655 Kearny Villa Rd. and 9175 & 9181 Kearny Villa Court adjacent to the existing Metropolitan Operations Center.

MOC-7 Storage Facility: This building was purchased by the City of San Diego in 1999 having a footprint of approximately 12,875 square feet. This building will be used as a storage facility for the Central Support of the O&M Division. The existing building will remain with major renovations to include new concrete slab, new roof, new lighting, storage area, rest room area, complete fire suppression system, and an office area. Approximately 11,107 square feet will be allocated for heavy duty storage in steel bins, approximately 928 square feet will be allocated for office and minor storage items, and approximately 840 square feet will be allocated for an upper mezzanine area for light storage. Landscape and site work improvements are also part of this project. Site work consists of installation of new concrete paving and curbing. It is estimated that construction will start August 2002 and be completed by February 2003.

MOC-8 STORAGE FACILITY: This building was purchased by the City of San Diego in 1999 having an existing footprint in approximately 6,874 square feet. This building will be used as a storage facility for the Central Support of the O&M Division. The existing building will remain with major renovations to include a new concrete slab, new roof, new lighting, storage area, restroom area, and an office area. Approximately 5,527 square feet will be allocated for heavy duty storage in steel bins, approximately 774 square feet will be allocated for a light storage room and restroom, and approximately 573 square feet will be allocated for an upper mezzanine light storage area.. Landscape improvements are also part of this project. It is estimated that construction will start November 2002 and be completed by June 2003.

MOC-9 AUTOMOTIVE REPAIR FACILITY: This building was purchased by the City of San Diego in 1999 having an existing footprint of 12,289 square feet. The purpose the new building is to house Metropolitan Wastewater Department's Automotive Repair Facility which will service 325 vehicles. The major benefits of the proposed facility are savings in transportation and fuel costs, decreased down-time, and increased field crew productivity. The existing building will be demolished and replaced with a new structure having a footprint in approximately 13,200 square feet with six large work bays, three small work bays with direct access to the existing MOC-5 parking area. This new facility will have a parts storeroom, lube compressor room, tire shop area, break training room, men and women's rest room facilities, an office area, two hydraulic lifts, a 2-ton traveling bridge crane. Improvements will also include landscape and irrigation modifications. This phase has been deferred to FY 2010.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$1,194,406 or 10% of the total cost of this project is funded from current bond issue (including reimbursement).

46-104.0

NORTH METRO INTERCEPTOR - RB

This project provides for a three-phase project to increase the capacity of the existing pipeline from 153 million gallons per day (mgd) to 318 mgd.

Phase I: This phase includes the construction of a 108-inch diameter reinforced concrete pipe (RCP) 10,036 feet long, which begins at the intersection of Friars Road and Napa Street and terminates at the intersection of Barnett Avenue and Gearing Drive. A re-vegetation contract is associated with this phase which mitigates for construction of a portion of the pipeline through the San Diego River. An Environmental Impact Report (EIR) was prepared for Phase I and certified by City Council. Phase I also includes renovation of a portion of the existing North Metro Interceptor Sewer (NMIS), north of Barnett Avenue, which will take place following the completion of construction of Phase II. NMIS Phase I is currently under construction and is scheduled to be operating by fall 1996. Pending easements for this project are from the California Department of Park & Recreation and Metropolitan Transit Development Board.

PHASE II: NMIS Phase II consists of the construction of a 114-inch RCP, 4800 feet in length, as well as the renovation of the remainder of the existing NMIS. The proposed gravity sewer in Phase II would run southerly from the terminus of Phase I, at Barnett Avenue near the intersection of Gearing Drive, under the Marine Corps Recruit Depot (MCRD), Lindbergh Field International Airport and the Naval Training Center (NTC) to approximately 200 feet north of the Metro Pump Station No. 2 (PS #2), located on North Harbor Drive. There it joins the existing 96-inch interceptor that connects to PS #2. The entire NMIS Phase II, except for 400 feet at the connection to the existing NMIS, will be installed by tunneling method. Construction began in September 1996. An Environmental Assessment/Mitigated Negative Declaration (EA/MND) is currently being prepared for NMIS Phase II.

PHASE III: This phase is the final phase to divert significant flows away from the old North Metro Interceptor. The Mission Bay Interceptor flows will be diverted at Pacific Highway just north of Friars Road through the construction of diversion structures with operable gates. The flows will then be connected to the 108-inch pipe constructed in Phase I near the intersection of Friars Road and Napa Street using a portion of the old North Mission Valley Interceptor.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$1,856,603 or 3% of the total cost of this project is funded from current bond issue (including reimbursement).

46-209.0

NORTH METRO INTERCEPTOR - IIIB - B

This project provides for the inspection, rehabilitation and repair of the existing 96-inch North Metro Interceptor, beginning at the intersection of the San Diego River, between the intersection of Interstate 5 and Interstate 8, terminating at Metro Pump Station No. 2 on Harbor Drive.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.
This project has the potential for funding from future bond issues.

This project is not funded from this bond issue.

46-182.0 **POINT LOMA-CHEMICAL FEED SYSTEMS UPGRADE** - RB

This project provides for upgrading the ferric chloride and polymer chemical feed systems at the Point Loma Water Treatment Plant (PLWTP). Proposed improvements include replacing two ferric chloride tanks, installing a third ferric chloride tank, upgrading chemical unloading facilities and adding automatic flow-pacing of ferric chloride and polymer feed systems. Improvements also include upgrading and utilization of the existing polymer feed building which is currently out of service. Automatic flow pacing and multiple discharge points will be constructed to allow for operating flexibility and fine tuning of chemical addition to maximize the plant's performance. This project is currently in the design phase.
Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$357,229 or 6% of the total cost of this project is funded from current bond issue (including reimbursement).

46-129.0 **POINT LOMA DIGESTER N1 and N2 ROOFS and HEATING SYSTEMS** - RB

This project provided for the repair and upgrade of the two northern-most digesters at the Point Loma Wastewater Treatment Plant. Their roofs and heating systems were replaced and upgrades were done to the piping and the other components.

These digesters are used to treat the raw sludge that is drawn off the sedimentation basins. This sludge is mixed and heated in the digesters to achieve a pathogen reduction so that the sludge after drying may be reused beneficially. The digested sludge when removed from the digesters is pumped through a pipeline to a sludge drying facility.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has been completed.

45-943.0 **POINT LOMA GRIT PROCESSING IMPROVEMENTS** - RB

The Point Loma Wastewater Treatment Plant has six aerated grit basins, divided into south, central and north pairs of tanks. The south tanks were constructed as part of the original treatment plant in 1962. The central tanks were added in 1983 and the north tanks were added in 1988. Removal of grit was found to be more efficient at average flow when the south tanks were not used. Therefore, in 1992, the south tanks were taken out of service. All six grit tanks are needed during wet weather flows to improve grit removal rates. Replacement and/or modification of the south tanks was in the original Interim Order for the Clean Water Program of greater San Diego.

The major components in the recommended project include reconstruction of the south grit tanks and its adjacent pump gallery, replacement of the 1962 grit processing headworks building with an odor controlled,

drive through facility which will include new grit processing equipment and replacement of grit agitation air blowers and piping.

Improvement to the reconstructed South Grit tanks will include widening and deepening the channels and relocation of the tank influent and effluent ports to increase detention time, increasing the slope of the tank bottom to promote grit migration and installation of longitudinal and transverse baffles to promote grit removal.

Improvements to the new headworks building will include a new grit storage and loading facility which will replace the existing Cyclone grit separators with the newer technology of Teacups and Snail grit classifiers. This building will provide a drive through loading capability with containment of odors.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$3,900,622 or 15% of the total cost of this project is funded from current bond issue (including reimbursement).

46-175.0 **POINT LOMA - HEADWORKS, ODOR CONTROL AND GRIT PROCESSING FACILITIES** - RB

This project provides for the following improvements of the Headworks, Odor Control and Grit Processing Facilities:

- C Replacement of the screenings belt conveyors with a segmented belt conveying system.
- C Replacement of the five existing traveling filter screens located in the influent channels at the head of the plant with new climber-type screens. The new screens will be capable of removing rocks in addition to sewage screenings.
- C Reconfiguration of floor drains in the screenings processing areas to return drainage upstream of the screens.
- C Installation of screenings washer/compactor.
- C Modification of the existing piping, valving, and grit pump controls for the north and central grit removal basins.
- C Installation of two Teacups and a Snail grit dewatering equipment and a new grit hopper outside the west end of the existing Headworks Building to replace the function of the two existing undersized grit dewatering units for the central and south grit removal basins.
- C Conversion of the oxidizing chemical feed and storage system for all odor removal systems from hydrogen peroxide to sodium hypochlorite. A new chemical storage area, chemical metering pump system, and chemical pacing control system are required for the conversion.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$607,420 or 3% of the total cost of this project is funded from current bond issue (including reimbursement).

45-939.0 **POINT LOMA - MAINTENANCE BUILDING EXPANSION PHASE I** - RB

The existing Maintenance Building is approximately 14,310 square feet with a partial second story. The proposed expansion will add 4,282 square feet which includes additional office spaces, kitchen, conference room, bathroom,

elevator, and another stairwell on the east side of the building. The Notice to Proceed to the construction contractor was dated August 30, 1999. Phase one of the Maintenance Building Expansion project was certified substantially complete on November 15, 2000.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$2,725 or less than 1% of the total cost of this project is funded from current bond issue (including reimbursement).

46-217.0 **POINT LOMA -NORTH ACCESS ROAD** - RB

This project provides for a new route to the Point Loma Wastewater Treatment Plant through Navy property by way of Woodward Road and Gatchell Road in order to minimize the driving distance to the plant, avoid traversing Cabrillo National Monument property and bypass tourist traffic. The average daily traffic along Cabrillo Memorial Drive has steadily increased over the years. Today's traffic is a mixture of military vehicles, construction equipment, private vehicles belonging to civilian employees who work at Point Loma, visitors touring the Cabrillo National Monument, and treatment plant personnel.

This project proposes improvements to approximately 0.8 miles of the existing road consisting of a 24-foot wide asphalt road with 5 foot wide shoulders on each side and drainage upgrades. The proposed road will reduce travel distance for Metropolitan Wastewater Department employees by 3.6 miles for each round-trip visit to the treatment plant. Since the new road will traverse Federally owned land within the Point Loma Naval Complex, its use will be restricted to selected Metropolitan Wastewater Department employees approved by the U.S. Navy.

Design of this project began in Fiscal Year 2001. The design phase is scheduled to be completed in Fiscal Year 2002. Construction of this project was anticipated to begin in late FY2002.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$607 or less than 1% of the total cost of this project is funded from current bond issue (including reimbursement).

46-180.0 **POINT LOMA - NORTH OPERATIONS BUILDING** - RB

This project is for the construction of a three-story building for centralizing plant operations. The new earthquake resistant building will serve current and future needs more efficiently by uniting and accommodating personnel performing treatment plant operations. The building is planned for three levels with a total area of approximately 19,856 square feet. The accommodations are intended for operations staff and certain administrative functions. Because the Point Loma Wastewater Treatment is operated 24 hours per day, the operations staff will require special amenities.

The building's first level will include men's and women's locker rooms, a small kitchen, supervisors' offices, mechanical room, records storage, tool room, lunch room and training room. The second level will include an automatic control and communications system work station, operators' offices,

conference rooms and administrative facilities. Laboratory facilities, which are mainly in the administration building and a few scattered locations around the plant, will be added to the North Operations Building. The building's third floor will accommodate three laboratory facilities comprising about 3,200 square feet of area and will consist of a common laboratory, technical services laboratory and a process control laboratory.

CIP 46-180.1 Point Loma Administration Building Interior Improvements Sublet is included in this project for interior improvements to the building to provide ADA restrooms and convert former lab area to new offices, library and conference room for engineering staff. New facilities will allow staff to vacate existing temporary trailers for their removal.

The Metropolitan Wastewater Department is constructing the North Operations Building in the northwest area of the treatment plant's 40 acre property.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$182,053 or 2% of the total cost of this project is funded from current bond issue (including reimbursement).

46-185.0

POINT LOMA - NORTH SHORELINE PROTECTION IMPROVEMENTS -

This project provided for the protection from further erosion of the cove area near the proposed North Operations Building (NOB). The Metropolitan Wastewater Department (MWWD) is constructing a North Operations Building in this northwest corner of the treatment plant's 40-acre property. The proposed building and site would be bounded on the east by First Street, on the west by the bluffs overlooking the Pacific Ocean. The building is planned for two levels with an area of approximately 4,500 square feet per level, with the accommodations intended for operations staff and certain administrative functions.

The proposed location for the North Operations Building at The Point Loma Wastewater Treatment Plant (PLWTP) is underlain by fill and bedrock of the Point Loma Formation. Approximately 12 ft. of undocumented fill exists beneath the proposed building. This fill will need to be removed down to competent bedrock and replaced with compacted fill. Surface drainage will be corrected so as not to drain over the west facing slopes. A soil berm will be constructed along the western edge of the proposed building pad to help control drainage. The compacted fill will slightly increase the usable space in the northwest corner of the building pad.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has been completed.

40-923.0

POINT LOMA OUTFALL REBALLASTING -

This project provides additional ballast along 4500 feet of the original Point Loma Outfall. The near shore portion of the original outfall was reballasted during the repair project following the outfall failure in 1992. Rock added to the outfall will hold it in place and prevent failure of the structure. With this project the entire 108 inch Point Loma outfall will have been reballasted.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has been completed.

42-924.0 **POINT LOMA - PARKING FACILITIES** -

This project provides for parking improvements at the Point Loma Wastewater Treatment Plant to replace those parking spaces being lost to construction of new treatment plant facilities and buildings. As agreed with the community, Navy and the Cabrillo National Monument most of these improvements will be located at the North Parking Facility at the north end of the plant. Two earth wedges using crib walls are proposed for the entrance. These raised earth structures will be planted with native coastal scrub and will conform with other structures located on the Point Loma peninsula.

Initial phases of the parking improvements will be implemented by 1997. Subsequent phases are planned with the North Operations Building with a completion date in 2001. Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has been completed.

46-132.0 **POINT LOMA - PLANT ACCESS ROAD** - RB

This project provides for the repair and upgrade of the Cabrillo/Gatchell Road. 6400 feet of this service road has been repaired and repaved. In addition, drainage facilities will be added to improve access for maintenance of the existing drainage culverts.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$175,123 or 19% of the total cost of this project is funded from current bond issue (including reimbursement).

46-179.0 **POINT LOMA - POWER GENERATION AND DISTRIBUTION UPGRADE** - RB

This project provides for the upgrade and expansion of the existing Gas Utilization Facility and the Electrical Distribution System that will provide safe, reliable and adequate power for the Point Loma Water Treatment Plant (PLWTP) expansion. A demand load analysis (conducted during preliminary design) projected an average power demand of 3588 kW through the year 2030 for the Point Loma Water Treatment Plant Upgrade and Expansion Program. The existing demand load is 1350 kW. Plant reliability is, in part, dictated by the Environmental Protection Agency's design criteria which applies to two primary areas: (1) the need to correct deficiencies in the existing electrical distribution system and (2) the need to maintain two separate and independent sources of power to the Point Loma Water Treatment Plant. Additional criteria developed during a value engineering process are: (1) beneficial and cost effective use of digester gas produced and (2) maintaining nitrogen oxide (Nox) emissions from the plant below the Air Pollution Control District threshold of 50 tons per year. The new engines will produce significantly less nitrogen oxide (Nox) emissions per kilowatt-hour because they employ a precombustion chamber to burn a lean fuel mixture.

During construction two separate sources of power will need to be maintained. In order to meet this requirement the main switchgear will need to be

installed in a staged sequence. Also, the emergency diesel generator must be installed prior to replacement of the engine generators. The engine generators, heat recovery equipment, and main switchgear which require long lead time for delivery will be prepurchased. Certain elements of the Gas Utilization Facility upgrade need to be coordinated with the planned construction of the Central Boiler Facility which will be located immediately south of the Gas Utilization Facility. The south radiator and ammonia tank located within the proposed Central Boiler Facility site need to be demolished prior to grading and foundation work for the Central Boiler Facility. In addition, the effluent cooling system and temporary ammonia tank need to be in place and functional prior to demolishing the south radiator and ammonia tank.

Project tasks were divided into three construction packages as follows:

PACKAGE A - GAS UTILIZATION FACILITY SUPPORT SYSTEMS: This package includes installation of a new 1,500 kW diesel fueled emergency generator and a concrete vaulted spill proof 4,000 gallon diesel fuel storage tank. The new generator will replace the existing 160 kW black start generator in order to supply emergency backup power to the plant and black start capabilities. Because it will be connected to the main plant switchgear, the diesel generator can feed the influent screens and other critical equipment in case both San Diego Gas & Electric and the Gas Utilization Facility engines are down. The diesel generator will be located in the southwest corner of the Gas Utilization Facility operating floor and the fuel storage tank will be installed on a new concrete pad located at the northwest corner of the existing South Screening Facility.

Other major work included in Package A is construction of a new 630 sq. ft. Compressor Building and refurbishment of an existing 518 sq. ft. Compressor Building. Both buildings provide enclosure for compressors that maintain digestive gas pressure at a level required for proper operation of engine generators. Due to the high level of noise generated by the compressor equipment, both buildings are designed to be acoustically improved to reduce noise level down to 65 dB, within 10 feet of the building.

The Compressor Building will be located at the west side of Third Street, between existing digesters C2 and S1. The new building will be a pre-engineered metal structure with corrosive resistant ribbed-wall siding and roof panels. Refurbishment of the existing Compressor Building shall require demolition and replacement of metal superstructure, as structural framing and exterior metal panels have deteriorated due to corrosion. The construction of new concrete stairs on-grade will connect the new and existing Compressor Buildings.

Installation of the following auxiliary equipment is also included in Package A: a new heat exchanger outside of the existing Compressor Building, new effluent cooling pumps and heat exchanger piping at the existing effluent channel east of First Street, and new heat exchanger piping at the lower floor of the Gas Utilization Facility.

PACKAGE B - GAS UTILIZATION FACILITY UPGRADE: This construction package is entirely dedicated to upgrades, improvements, and remodeling of the existing Gas Utilization Facility. The essential element of the Power Generation and Distribution Upgrade Project is replacement of the two existing 1,350 kW digester gas burning engine generators with two new 2,250 kW engine generators. Auxiliary systems which will be replaced or modified to ensure reliable operation include: engine heat recovery, engine jacket water cooling, lube oil storage, compressed air, and make-up water. In addition the existing 4,160 volt main switchgear will be replaced by new split bus switchgear.

Modifications to the interior floor plan of the Gas Utilization Facility will improve space utilization and noise control, increase accessibility, and bring

the facility in compliance with current building codes. Improvements include an exterior exit stair enclosure at the northeast corner and extension of the existing mezzanine to the north in order to provide 693 sq. ft. of additional space for a new control room and two new offices. At the operating floor level, the existing Electrical Room, Control Room and Break Room, including shower and locker areas, will be demolished and remodeled into expanded facilities for a Break Room, restrooms and lockers.

Construction Package B will also include landscaping of the entire area around the Gas Utilization Facility extending north toward the existing Maintenance Building, and the planting of trees along the east side of First Street. Other elements associated with landscape improvements include construction of a coast walkway along the south and west side of Gas Utilization Facility extending toward the existing Maintenance Building and concrete stairs on-grade connecting the coast walkway to a proposed common area below and west of the San Diego Gas & Electric substation.

PACKAGE C - ELECTRICAL DISTRIBUTION SYSTEM UPGRADES: Work included in this package will provide upgrades to the power distribution system within the entire plant. The existing 4,160 volt loop system will be upgraded to a dual radial selective system. The capacity of existing loop feeders will be increased and selected Motor Control Centers will have second feeders installed from a separate power center. New automatic transfer switches shall be installed to provide second feeds to critical loads. All existing power centers (PC1-PC8) with the exception of PC9 will be upgraded. Upgrade plans call for expansion of concrete pads to accommodate new equipment. Existing concrete block screen walls will be demolished and replaced with colored, plastic-coated chain link fabric, mounted on modular metal frames.

A new power monitoring system will be installed to monitor power centers, Switchboards 20 and 31, and 10 MCC-1 and -2. The power monitoring units will be connected to the plant-wide Distributed Control System through process control modules located throughout the plant.

Package A started construction in 1997 with completion in 1998. Packages B and C started construction in 1997 with a 24 month duration. The purchase order for the major equipment prepurchase was issued in 1997 with delivery of equipment in 1998.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$327,722 or 1% of the total cost of this project is funded from current bond issue (including reimbursement).

46-110.0 **POINT LOMA - SCUM REMOVAL SYSTEM** - RB

This project provides for the upgrading and improvement of the existing scum collection system used on the sedimentation basins at the Point Loma Water Treatment Plant (PLWTP). Sedimentation basins 1 through 8 will be converted to a slotted pipe scum collection system. Sedimentation basins 9 and 10, and the proposed basins 11 and 12 already incorporate this system. Other improvements to the scum collection systems include a new scum concentrator building in the north area of the plant. Also, the damaged concrete and reinforcing bars in sedimentation basins 1 through 8 will be repaired, reconstructed and restored. The slide gates and PVC liners located near the parshall flumes at the headworks will also be replaced or repaired.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$37,749 or less than 1% of the total cost of this project is funded from current bond issue (including reimbursement).

46-177.0

POINT LOMA - SEDIMENTATION BASINS 11 AND 12 -

This project provided for the construction of Sedimentation Basins 11 and 12 which will allow the Point Loma Water Treatment Plant (PLWTP) to treat and discharge an average dry weather flow rate (ADWF) of 240 mgd and a peak wet weather flow rate (PWWF) of 432 mgd. The PLWTP is currently permitted to discharge an ADWF of 219 mgd and a PWWF of 395 mgd through the 108-inch diameter Point Loma Outfall.

Sedimentation Basins 11 and 12 are similar to basins 1 through 10 in size, configuration and method of operation. Each basin is comprised of three 20 ft. wide bays equipped with separate chain and flight collection equipment to remove sludge from the bottom and scum from the top. All the basins will be of the same length and width as the four original basins; however, the average depths will vary slightly. Sedimentation basins 11 and 12 are each approximately 65 feet wide and 225 feet long and will increase the treatment capability of the PLWTP by twenty million gallons per day. The basin will be covered and mechanical systems are to be provided for sludge and scum collection. Both of the existing influent and effluent channels will be extended to serve sedimentation basins 11 and 12.

As part of this project, a fabricated odor control system was installed for attenuating odors which may be generated by the two new sedimentation basins. The necessary construction items include a new expanded pipe gallery adjacent to the basins and the relocation of two air compressor units. The existing pipe gallery was widened and extended to a point where it will tie in to the proposed FIRP Sludge Pump Station Project.

This project has been completed.

45-937.0

POINT LOMA SITE IMPROVEMENTS - RB

This project provides for entrance improvements, new guardhouse with security card access, parking, landscape and irrigation improvements at the Point Loma Wastewater Treatment Plant. Some artwork such as pavement images, lighting and color enhancements will be installed with this project.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$2,046,785 or 46% of the total cost of this project is funded from current bond issue (including reimbursement).

46-176.0

POINT LOMA - WATER TANK AND PIPELINE PROJECT -

This project provided for the improvement of the reliability of both the industrial and potable water supplies at the plant by providing increased local storage capacity and correcting existing pressure deficiencies. Separate water systems for potable and industrial uses are necessary for protecting the health and safety of plant personnel.

The primary source of water for the southern Point Loma peninsula is through a single two-mile long, Navy-owned, 12-inch diameter pipeline. The water main is located in Cabrillo Memorial Drive. At the City water tank site connection, the 12-inch line is reduced to a 10-inch pipeline with an 8-inch tap going to the tank via two 4-inch meters. The Navy's 10-inch water main continues south in Cabrillo Memorial Drive and Cabrillo Drive.

The old 45,000 gallon water tank facility was located inconspicuously at the southern end of the Fort Rosecrans National Cemetery, fifty feet from the west side of Cabrillo Memorial Drive on U.S. Navy property. The 31 year old circular steel tank was roughly 26 feet in diameter and 14 feet in height; and it was approximately 630 feet due east of the treatment plant's primary digester N1, and about 240 feet in elevation above the treatment plant main level. The roof of the tank was at street level because the tank is down grade from the road, helping it to maintain a low-profile.

The old water tank and distribution system were unsatisfactory, especially for fire flow demand, and needed to be expanded to adequately handle both the plant operational demands and fire flow storage. This project provided 650,000-gallon industrial water storage reservoir along with new water supply pipelines from the reservoir site to the treatment plant.

The new 650,000 gallon tank will be completely covered with soil and landscaped. A small 5,000 gallon tank will be situated on the site to provide potable water. The 12-inch pipeline to the plant will be trenched using conventional construction methods.

The tank project is complete. Additional waterlines and system retrofits are still under construction.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has been completed.

46-503.0

REHABILITATION OF THE ON-SHORE OUTFALL -

This project provides for the encasement in concrete of the steel portion of the 108" outfall pipe. The South Effluent Outfall Project exposed the severe corrosion problem in this steel pipe. This project will add considerable life to this system thus avoiding a costly replacement project. The outfall pipe is located on shore at the Point Loma Wastewater Treatment Plant at elevation -12' mean sea level. The portion to be encased begins at the existing turbine box west of the vortex structure and continues approximately 50 ft. seaward to the shore line where a reinforced concrete pipe begins.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has been completed.

46-134.0

SOUTH EFFLUENT OUTFALL CONNECTION -

This project provides for a 108-inch diameter pipeline and several associated components that connect the Point Loma Wastewater Treatment Plant (PLWTP) to the City's 4.5-mile long ocean outfall.

The South Effluent Outfall Connection, which parallels a northern connection to the outfall, consists of multiple elements, including a new screening structure and L-shaped pipeline 700 feet in length which connects to new throttling valves. Collectively these convey and control treated wastewater flow, or effluent, and significantly reduce the amount of air reaching the existing outfall.

The new connection also allows for maintenance, repair, and rebuilding of the existing north effluent outfall system. Once the existing north system is rehabilitated, it will serve to back up the South Effluent Outfall Connection during routine maintenance and inspection.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has been completed.

45-941.0 **SOUTH METRO DOWNTOWN TUNNEL REHABILITATION** - RB

This project provides for the rehabilitation and upgrading of approximately 11,000 feet of the existing 84-inch tunnel which runs from the intersection of 19th and Commercial Avenue to the San Diego County Administration Center at 1600 North Harbor Drive. The original tunnel is 40 years old. Over time portions of the PVC liner interior of the tunnel have delaminated from the concrete allowing sewer gases and bacteria to deteriorate the reinforcement steel. It is imperative that the concrete and liner be repair to protect the integrity of the tunnel.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$1,968,648 or 30% of the total cost of this project is funded from current bond issue (including reimbursement).

45-911.0 **SOUTH METRO REHABILITATION** - RB

This project provides for the repair and rehabilitation of the 108-inch diameter concrete South Metro Interceptor (SMI) pipeline which currently transports almost 100 million gallons of wastewater per day. The large 108-inch diameter South Metro Interceptor spans under heavily traveled North Harbor Drive from Grape Street, past the airport, to Pump Station No. 2. During rehabilitation of the SMI, the pipe lining materials will be applied to the interior of the SMI while the interceptor is in operation during low flow periods. Flows within SMI and the North Metro Interceptor can be partially controlled by the pump stations common to both interceptors; these include San Diego's Pump Stations No. 1 and No. 2, and Coronado's Trans-Bay Sewage Pump Station.

The proposed activity consists of inspecting and rehabilitating approximately 11,165-feet of the previously unlined 108-inch diameter SMI. The entire length of this project lies within the Centre City community planning area. Throughout the SMI's lifetime (31 years) the interceptor has experienced increased deterioration in certain sections. This deterioration is the result of biochemical oxidation of hydrogen sulfide gas. Other factors that have contributed to the pipeline's deterioration include the daily rise and fall of sewage (which washes and dries on the sides of the pipe), and the sewer's poor

ventilation. Deterioration of the 108-inch diameter SMI has been estimated to range in severity from 1 to 6-inches mainly on the crown/ceiling and side walls of the pipe interior. Additionally, the originally 11.75-inch thick pipe has experienced increasing rates of corrosion due to higher levels of bacteria in the pipeline in recent years. Increased bacteria counts have resulted from recently enacted industrial pre-treatment programs. These programs have been successful at reducing heavy metals but have also created the side effect of removing the toxic agents which have kept bacteria counts in check. For the above stated reasons, the SMI is in need of rehabilitation. This project will be done in three phases.

South Metro Interceptor Initial Repair Project (Phase I): This project consisted of trenching to expose 230 feet of 102-inch pipeline and performing a repair which involved an exterior PVC liner enclosed in a steel-reinforced concrete cap. The repair location was on the lawn of the County Administration Center, just 100 yards from San Diego Bay in a highly visible locale. The total construction period for this initial repair went from September 1993 to May 1994.

South Metro Interceptor 102-inch Rehabilitation Project (Phase II): This project started in September of 1994 and was substantially completed by February of 1995. The method used to rehabilitate the interior crown and side walls of the 102-inch pipeline was the Danby process installed by Rondeau Bay Construction Inc. The limits of the 102-inch rehabilitation were roughly 1,200 feet long, extending from the Metro Tunnel under the lawn of the County Administration Center to Grape Street.

South Metro Interceptor 84-inch Emergency Repair: This project will repair the 84-inch diameter interior with the foam lining system manufactured by Linabond, Inc. The uncovered damaged area of 300 square feet inside the interceptor measures about 6 feet in height and 50 feet in length, and is located approximately 75 feet upstream of the 84" to 102" transition structure. Manholes and access structures will also be repaired.

South Metro Interceptor 78-inch and 84-inch Manhole Repair: Inspection and repair of the steel 70-foot deep access shafts, 78" and 84" in diameter.

South Metro Interceptor 78-inch and 84-inch Diameter Inspection: Inspection and repair of the 78-inch and 84-inch diameter segments which traverse the downtown area.

South Metro Interceptor 108-Inch Rehabilitation (Phase III-A): The section of pipe to be worked on is located underground within an easement which starts from a junction structure near the intersection of Grape Street and North Harbor Drive. The work will be accomplished completely within the interior of the 108-inch interceptor and its appurtenances. The work would proceed underground, within the interceptor, along the North Harbor Drive alignment for a distance of 6,318 to the vicinity of Winship Lane by Lindberg Field.

The rehabilitation work of the 108-inch diameter pipeline would occur in the early morning hours, from approximately 12:00 AM (midnight) to 7:30 AM. Work on the pipeline would be done during this time frame because that is when sewage flows are at their lowest; and to permit workers access within the pipe. Three work crews, consisting of 6 to 7 persons, would gain access to the pipeline through five access structures along the 6,318-foot length which will be rehabilitated. It may also be necessary to construct small diameter (8-inch) intermediate shafts to allow hoses for introduction of lining material. Equipment consisting of two to three trucks, tunnel lining equipment, and ventilation equipment would be stationed above each access structure to assist the crews with their rehabilitation.

The technologies being considered to rehabilitate the pipeline are relatively new and have distinct methods of application. Regardless of the method used, the inside of the SMI would need to be pressure washed to remove the acidic paste that currently coats the sides of the pipe. The first technology is called Linabond. Once the acidic paste is removed, Linabond foam is sprayed which coats the interior of the pipe. PVC sheets are then made to adhere to the foam that in turn protects the pipe from further corrosion. The second technology under consideration is called Danby. Pre-fabricated strips of PVC lining are attached to the inside of the pipe, then the space between the pipe wall and the PVC strips is filled with grout. Although the technologies differ they achieve the same goal of rehabilitating the pipe.

While crews are working within the 108-inch diameter SMI, two upstream pump stations, one at the City of Coronado and the other, Pump Station No. 1, would be turned off to restrict the wastewater flow to a minimum in the pipeline. At the other end of the pipeline, Pump Station No. 2 would continue to pump wastewater to the Point Loma Wastewater Treatment Plant (PLWTP). The synchronized operation of these pump stations would lower the level of wastewater in the pipe to approximately 18 inches, allowing workers to rehabilitate the interceptor. Ventilation equipment would be stationed above the access manholes for providing clean air to the work crews inside the pipeline. Although the manholes used for entry would be open during the hours work is in progress, it is not anticipated any odors would occur at the surface.

South Metro Interceptor 108-Inch Rehabilitation (Phase III-B): This phase will be a further continuation of the project described above by rehabilitating the existing SMI from Winship Lane to Pump Station No. 2. This phase will also include work which may have to be accomplished to keep the wastewater flow from the pump station common wet well from flowing back into the SMI.

South Metro Interceptor South of Pump Station #1: The Metropolitan Wastewater Department in coordination with the Wastewater Collection Division launched a manhole inspection program in May 1996. The inspection covers 38 manholes south of Pump Station #1. Based on the investigation and findings, 16 out of 38 manholes inspected were severely corroded and require rehabilitation immediately. Although most manholes exhibit some deterioration the inspection team felt that the extent of the deterioration on the remaining 22 manholes is not as severe and that the manholes did not need immediate repair.

This project is divided into two segments, the first segment consist of 16 manholes that are severely corroded and will be rehabilitated using the PERMAFORM method since they lack structural integrity and require steel reinforcement. This portion of the repair work is anticipated to be started in late spring of 1997.

The second segment will consist of the remaining 22 manholes whose structural integrity is still intact. The application corrosion inhibiting coating is proposed for this segment.

Expenditures to date are reimbursable.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has the potential for funding from future bond issues. \$2,876 or less than 1% of the total cost of this project is funded from current bond issue (including reimbursement).

45-910.1 **TRUCKED LIQUID WASTE DISPOSAL SITE** -

This project provides for the management of trucked liquid waste (TLW), e.g. industrial, septic, portable toilet and treated grease trap waste. Currently this project is involved in evaluating potential site locations and defining the level of processing of trucked liquid waste. A total of nine sites have been considered. The sites vary from existing TLW receiving areas to incorporation of these facilities into projects currently under construction.

The facilities which may be required range from modification and expansion of truck access and discharge areas and improvements to odor control equipment to independent primary treatment followed by a treatment of the settled primary sludge. In addition, consideration will be given to developing and operating more than one TLW facility to avoid traffic congestion and provide facilities which are accessible from all regions of the City and minimize the impact to a single site.

Funds may be set aside from this project for mitigation and such funds are a bond reimbursable expense.

This project has been completed.